Apple2000

THE NATIONAL APPLE USERS GROUP

APRIL 1989 VOLUME 4(2)

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Apple2000
The All Apple
User Group
Committed to
All Apple Users
including Macintosh

Apple2000

April 1989

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CONTENTS

Apple2000 supports users of all the Apple computers. The ITT 2020, I, II, II+, //e, //c, //c+, IIgs, ///, Lisa, XL, Mac 128, 512, MacPlus, SE, SE/30, Mac II, IIcx and IIx

Contributions and articles for the magazine are always welcome. We can handle any disk size or format. Please send to the PO Box, L21 8PY.

NOTE:
In general the front half of the magazine is for the Apple II, Apple IIgs and Apple /// The back half for the Macintosh and Lisa. Look out for the descriptive page icons.

Key:

Apple II, //e and //c 
Apple /// 
Apple IIgs 
Macintosh, Lisa 
Macintosh II 

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There are a number of ways to contact Apple2000.

Force users who have a query about the service can contact the administrator, John Lee, directly for help and advice. Call him on the number opposite or send a message to his box on the Force.

If you wish to order goods or services from Apple2000, call Irene on [redacted] or (during office hours) call Alison on [redacted]. Both have Ansafones, in case they're not around. Alternatively you can Fax. to [redacted], write to the PO Box or (if you use comms) you can leave orders on TABBS addressed to the SYSOP.

If you are experiencing problems with Apple hardware or software Dave Ward and Tony Dart run the Hotlines and will try and help you.

We are very interested in the activities of local user groups, and if you have any information which you would like publicised John Lee would like to hear from you.

Moans and Groans - We don't get many of these, but the Editors have broad shoulders, so send these to them via the PO Box.

A little praise for a few of our authors wouldn't go amiss. Send all comments, and contributions, via the PO box, especially suggestions about what you would like to see in **your** magazine.

Editorial Shelf

March saw the introduction of the Macintosh IIcx and the standardisation, at least for the moment, of the 68030 chip as the core of the Macintosh range.

With this launch, we heard that prices of the Macintosh II range had been dropped by up to 25%. We at Apple2000 applaud this move. We have never understood why a machine assembled in Ireland, from parts originating in South East Asia, should cost more than the same machine bought in the States. Apple are now charging basically the same price in the UK for a Macintosh as in the States.

The reason for the price drop we understand is to try and stop the flood of grey importing. A pity that Apple could not simply drop the prices because they are far too high in the first place. A great number of people take one look at the price of an Apple and then go and buy an apology for a computer in a blue coloured box instead.

One thing that has been noticeably lacking in the Apple UK press releases of late has been any mention of the II series. That is the Apple II machines, not the Macintosh II ones. We would have expected a similar price drop on the IIgs for instance, or even an announcment that the //c+ would be sold over here after all. The confusion now must exist as to whether a //c is a IIcx or vice versa. Apple UK seem to continue the myth that there is only one type of Apple computer. Take a look on Page 1 of this magazine to see how many there really are! Many of these are still in production in one form or another.

We are seeing a large number of secondhand Apple II systems being released at very low prices on the market in the UK. The original owners of these have moved on in one direction or another. The new owners are unlikely to move on to a Macintosh, but might well move on to a //c+ or a IIgs. This upgrade path is all but denied to them.

The year is yet young. Apple have promised us even more machines this year, one of which will we hope be the IIgs+. I can only hope that when it arrives Apple UK sell it at a sensible price. There is a lot of good software for this machine. It deserves to be sold properly.

Ewen Wannop

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The Editorial team is:

Apple II	Macintosh
Ewen Wannop	Norah Arnold
	Irene Flaxman

Many thanks to all those who work behind the scenes and who receive no personal credit. These people are the stalwarts of Apple2000.

Additional thanks to Walter Lewis of Old Roan Press (051-227-4818) for our printing service, and to Ian Sharp of Sharp Studios (051-227-2788) for our cover design. (Graphics for the cover design supplied by Apple Computer UK Ltd, Adobe Systems Inc., Cricket Software, Electronic Pen)

Apple2000 are Founder Members and Wholehearted Supporters of the

Apple User Group Council

Letter Box

Orpington
Kent

Dear Ewen,

As OPEN-APPLE fans will be aware this organ of the AppleII "Kingdom" has recently been renamed A2 CENTRAL.

As a devout Open-Apple fan, I ordered the whole of Open-Apple on disk plus FASTDATAPro which is a search and find program with AND/OR/NOT logic. What you get is package of 5 full 3.5" disks with all the text plus programs covering the period Jan 1985 to Feb 89 with another disk containing FASTDATAPro.

In addition there now comes a monthly compendium (also on 3.5" disk) of each issue starting Feb 89. I have had two monthly disks so far and have not been disappointed. Each monthly issue is packed with that months copy from OPEN-APPLE plus down loads from Genie, Apple Technical Notes and much else from what is called "the best selection of Public Domain, Shareware and Freeware that we can lay our hands on".

From my point of view this provides me with first class search capacity, with just about all there is about the AppleII. I have hardly had the chance to delve properly, so this just a taste of the extras is in the last two months. Some new fonts, with font editors and converters from GS to Multiscribe to Publish It and again Printrix. BLU (Clive Zink's compaction program) is provided to un-compact 18 of Apple Computer's latest Technical Notes which are on BQY files (not BinaryII). There are also several new utilities for reading text files, and chopping them as well. Expensive, but really good value. Well done Mr Weishaar.

Peter Davis

❑ Thank you Peter. Apple2000 supports A2 Central strongly. The magazine is excellent value.

Liverpool

Dear Ewen,

You might like to publish a warning to users with a single 3.5 drive, no hard drive and two 5.25 drives on a GS (the configuration I have) who might try to follow the directions you gave for running Install on the new GS System 4.0 disk. I selected "Install Everything Possible" in accordance with your suggestion and spent a very frustrating twenty minutes or so while the machine loaded minute quantities of the various system tools at a time and added insult to injury by polling both 5.25 drives not just once but twice before requesting, or indeed permitting, a disk change. Eventually I gave up and switched everything off, disconnected the 5.25 drives and was very selective about the tools I installed (omitting all the Appletalk stuff and the Epson and LaserWriter drivers etc.). This had the advantage of leaving space on my startup disk for some desk accessories. "Install everything possible" leaves room for only two or three desk accessories on a 3.5 disk.

Everyone has told me that with a reasonable amount of expansion memory - I now have 512k on the expansion card - a GS with a single drive was a perfectly viable system. Experiences like running Install and the disk swapping needed just to launch an application from the Finder have convinced me that I either need a hard disk or a second 3.5 drive at least.

By the way, I have found a number of applications on the GS library disks that simply do not seem to work. The Doc file for Master.CDA seems to be corrupt, as it comes up on the screen (using Showfile) as a mass of inverse question marks.

C A Willey

❑ I am so used to working from my hard drive I forgot that things are not the same from floppies., I should have said that only the minimum GS/OS files should be installed onto a floppy disk.

As is now the case with the Macintosh, it is almost impossible to run the latest software or even the Finder for the GS, without a hard drive or a second 3.5 drive. I think Apple deliberately make all that disk swapping necessary so you will go and buy more hardware. This is a retrograde step from the compatibility we expect from an Apple II.

Hard drives are now getting much cheaper and would of course solve your problem. A second 3.5 drive would allow a system disk to be left online while you worked if you are not able to justify the expense of a hard drive.

An alternative to the Finder, and one that does not take up nearly so much disk space, is ProSel 16 from Glen Bredon. See Dave Ward's article in the June 88 issue for more details of how to contact Glen.

There are a few programs on the GS library disks that might cause problems in your machine. Some like ColorMind will not work under the new ROM, some sound programs will not work in only 512k Ram. This is especially true if launched from the Finder which itself takes up a lot of memory. Programs with a great deal of graphics may just run out of space under 512k. They should, if well behaved, just not run at all, or give an error message. However this is not always the case and they just might crash.

Showfile does not strip the 7th bit of any text files and so can cause unpredictable results if this bit is present. Jumpstart a launcher program on the new library disk 2GS012, usually has no problems displaying these awkward files.

The files on all the library disks are presented in good faith. They cannot all be guaranteed to work on every combination of IIgs. They have all been tested on a 1.25 mb colour IIgs (the most common configuration). Most come with a text or document file explaining how to use them. Refer to my article in the February issue of Apple2000 for more details of the P16 file types and where they should be placed.

Ewen Wannop

Letters to the Editors should be sent to the PO Box in Liverpool or uploaded to TABBS. We prefer to receive letters on disk. Disks will be returned when the magazine is published.

Fulltext Pro-80

A review of v.3.1 of this powerful word processor by Greg Carson

Philosophy

There are a wide variety of word-processing programs available for the Apple IIe, but possibly the two which are most widely used are those produced by Apple: AppleWorks and AppleWriter.

AppleWorks seems to be the program on which Apple sell the II range, providing a fully integrated environment comprising a word-processor, database and spreadsheet. Although I find the database and spreadsheet easy to use, the operation of the word-processor leaves much to be desired. This is mainly due to the awkward nature of formatting text via the OA-O menu, and the commands within that menu (how many keystrokes does it take to perform a super-script...?). The approach used by AppleWorks clearly favours the first-time user, but leaves you with a clumsy word-processor once you have become familiar with the package. The awkwardness of the word-processor may be somewhat alleviated by using one of the Beagle Brothers macro enhancements (the most recent being the UltraMacros of the TimeOut series), but why should one pay a considerable amount of money for a package, and then another £50.80 just to make it work properly? As well as the problem of the formatting of the word-processor, there is much disk access/swapping, making it sluggish on the IIe (less of problem if you possess a IIGS). Credit where it is due though, the package is doing a lot of work.

And so to AppleWriter 2.0, the ProDOS word-processor derived from its DOS predecessor, and inheriting all the genetic abnormalities guaranteeing it to be a species due for extinction. Possibly the biggest complaint is the use of "visible" control codes for printer operation, which use up line space. This problem may be solved using the excellent Don Lancaster patches. However, if you are unfortunate to possess a printer that does not accept two consecutive escape codes, then (as far as I am aware), the patch to solve the line length problem is not really useful. Even if it does work, the screen display looks a mess, and you still have to really think to construct, for example, a chemical formula or equation. When I look at people using AppleWriter, I really wonder about the micro-computer revolution that people keep on talking about. Having said that, I do not know how many WP packages there are that run on a basic 64K, unenhanced IIe (or on a 48K II for that matter). So under these circumstances, AppleWriter may still find a niche. Also, it does possess a powerful word processing language (WPL). Yet once again, if you have a 128K enhanced IIe, UltraMacros provides a much more powerful solution to programming.

So what choice is there for those of us who have a IIe and require a versatile word processor but do not use a spreadsheet or database to any great extent? If you are restricted to a 64K machine, there is Format-80 and its sister program, Format-80 Scientific. I only briefly tried the DOS versions of these packages but have to admit that I found them cumbersome. Although the scientific version provides excellent support for construction of highly complex formulae, they are awkward to construct and (if my memory serves me correctly) are not 100% WYSIWYG. However, my ultimate complaint about Format-80 is that it is a page-based word processor.

With 128K in your Apple, in my mind there is only one choice of word-processor and that is Fulltext Pro-80. I believe this package is a significant contribution to Apple IIe/c/GS users. (The arrival of GS Works may provide a better option for GS owners, but still leaves the IIe/c users in the cold). Basically, the package is not only as WYSIWYG a word processor as one if going to find on the IIe/c, but also boasts a character editor, an integrated spelling checker, small database (mail-merge), communications facility and graphics (picture) capabilities. However, one of the real treats is that the essential "guts" of the package is entirely memory resident.

The Package

The package comes in the form of two 5.25" disks (3 sides) and two manuals. The volumes are called /FULLTEXT, /FULLSPELL and /EXAMPLES, and respectively contain the main package, the dictionary and (surprise) examples. If you only possess a 3.5" drive, you have to persuade a friend or your local dealer (thank you Computech...) to let you use their system in order to transfer the files, since no 3.5" disk is included. This is despite the suitability of the package to run on the IIGS and the fact that all the files (including those in the Companion - see below) fit on a single 3.5" disk.

The disks are not copy protected, but are encrypted with a name identifying the legal owner of the package. This is displayed on the screen during booting and on the main menu. The accompanying manuals comprise a "reference" manual and a smaller "examples" manual. The latter is split into three sections: extra notes, lesson files and Fulltalk (the Fulltext communications module). The manuals are clearly written and cover all aspects of the package including elementary information such as the use of ProDOS directories and how to use the package to edit BASIC programs. The text is not laser printed but produced entirely on a dot-matrix printer (with the exception of the main headings and a few diagrams and lines). Thus the manuals illustrate what the package can do. The only problem is that the reference manual has not been entirely restructured for the recent update. The majority of new features are only briefly mentioned in the reference manual. For a full treatment, the "extra notes" section of the examples manual has to be consulted.

Available as a separate "add-on", is the Fulltext Companion, a disk (two sides) and manual containing utilities to further enhance the package. These are described below.

Operation

On booting the /FULLTEXT disk, there is the option of setting the date. If there is a system clock, the date option is skipped. If there is enough memory, one is presented with the option of copying the disk

to the RAM volume. Typing "Y" copies all the system files to the RAM disk. Pressing "OA-Y" will format the disk first allowing it to be used as the boot volume. The program then executes what I suppose is an "internal macro" that uses its filer (see below) to copy all files with the prefix PRO (i.e. all the Fulltext system files and utilities) from all devices, to the RAM.

A main menu is subsequently displayed on the screen. This displays the date (and if you possess a system clock, also the time). The prefix is displayed, and also the slot and drive. These may be set using "P", "S" and "D" respectively. Like all Fulltext options, choices are displayed by highlighting the first character of the option itself.

At the base of the screen is the current default pathname for the definitions file and the character file. Essentially, the definitions file defines all the printer codes for the various character formats as well as allowing a glossary to be created. So one would load in a different definitions file if the printer was changed from an Epson to an Imagewriter. Several definition files are included which cover most types of printers. On the very first use of the disk, the program presents a list of printers to choose from. On selecting the appropriate printer, the correct definitions file is chosen, which becomes the default on subsequent use. The default may be changed by either changing the suffix of the new definitions file from .DEF to .DEFNS (and doing the reverse to the existing .DEFNS file) or by pressing OA- during booting, where the options will be presented as in the initial boot.

The character files are the default alternate character sets (accessible by toggling CA-G(raphic) or CA-V(ariety) when in edit mode). These character sets are dumped to the printer as graphics, and may be edited by using the character editor from the utilities menu. The defaults of the package are "byte" and "script" fonts, but other sets are included on the disk and two different sets may be combined as well as individual characters edited. For instance, as a default, I set up Greek characters (from the FOREIGN.SET) for CA-G and italics (from the ITALIC.SET) for CA-V. Even though Fulltext provides a separate italic code (CA-I), having italics as an alternate character set is useful if you wish to print on an Imagewriter (which does not support italics). As an aside, this leads me to another superb feature of the package, and that is the ability to find/replace all text formatting. Any control or escape sequence may be typed in by pressing CA- at the same time. So if you wanted to replace all carriage returns with "elephants", press CA-<CR> allows you to enter the carriage return. Since formats are toggled on and off using the same option keystroke, all styles may be changed with one replace command; underline by bold, superscript by subscript and so forth. Going back to the alternate italic set, if I am working on an Epson, and then need to change to the Imagewriter, all I have to do to print in italics is to perform one global change of CA-I to CA-V. There will be no difference shown on screen, but italics will be dumped as graphics to the Imagewriter. This is a specific example, but from it, I think the numerous other possibilities may be appreciated.

The other options presented in the main menu are: L)oad file from disk, G)et file from disk, S)ave file on disk, F)iler, N)ew document, E)dit or enter text, Q)uit Fulltext, V)alues-menu/print, U)tilities. The first 7 of these commands are self explanatory, and I shall not go into them except to say:

a) The "Get" option catalogues the current directory, allows you to

choose a file by selecting a letter, and takes you straight into edit mode.

b) The filer provides all the ProDOS filing utilities one might expect (except for file transfer and formatting, which are under the utilities menu - see below).

c) There is the option of performing an unformatted save, i.e. one without the Fulltext header and without the control and formatting codes. I found this very useful when transferring documents from the Apple II to the Macintosh, and of course it may be invaluable when sending documents via communications lines.

I feel that I should stress that throughout the package all the formatting and task options are (as in AppleWorks) "mnemonic" in nature; for example CA-I, E, S, U and B perform italic, expanded, superscript, underline and bold formatting respectively. Also, they are consistent between the two main areas of the program. So OA-C will cut text in the word processor and cut a record in the mail-merge.

Fulltext also possesses an impressive glossary ('macro') feature, whereby using a combination of any key with both the OA- and CA- keys, a series of commands are performed. These may be in the form of a string of text within a document or control options. Any key may be used and the operation is case-sensitive. Thus for example, keys may be defined so that pressing OA-CA-F generates the text "Fulltext Pro-80" while OA-CA-f exits to the utilities menu, formats a disk in the current drive, names it "Apple2000" and leaves you in the filer. The commands are defined within the definitions file (thus different definitions files may be created containing different sets of glossary commands) and are immediately effective. The glossary commands are available from anywhere within Fulltext, and although not as sophisticated as specialised applications such as the TimeOut "UltraMacros" patch for AppleWorks, the glossary remains a very powerful feature of the Fulltext package.

Editing

First and foremost, the display is completely WYSIWYG. This it does by using the graphics screen and as such, screen formatting is slightly sluggish compared with word-processors that use the text screen (AppleWorks and AppleWriter). However, this is not really noticeable on a IIGS and is a minuscule price to pay on a IIe/c for the other advantages of the system outlined here. Justification (including centring and right-justification), italics, underline, super and subscript, bold, expanded, italic and any other obscure graphics that you may have created are displayed. Fulltext also offers "jumbo" (double-width-double-height) characters (CA-J), which when used in conjunction with enlarged mode gives a "20 column" screen.

When the number of characters per line are changed, the character width on the screen does not change according to the selection. However, the actual point at which the lines will break is where they break on the screen. If you select, for example, 17 CPI, and your page setup is such that the line is more than 80 characters wide (the width of the screen), a zig-zag margin will appear down the right hand side of the screen and the text will be truncated against this margin. However, pressing OA-> will show you your text to the right of this margin, and where the lines will break. As intuition tells you, pressing OA-< takes you back to the left hand side of the page. It is sort of like using the horizontal scroll bar on a Macintosh.

Pressing OA-E presents you with three options for viewing your text - edit (the default), raw text and page-break mode. Raw text allows you to view the text without all the Fulltext formatting (i.e. changes the screen from graphics to text mode). This may be useful under some circumstances but is essential when editing the definitions file (since it contains a plethora of control codes which would produce a horrendous mess if each one was directly interpreted as a Fulltext text formatting command). Incidentally, a small "window" in the lower right of the screen when in edit mode shows the raw text surrounding the current position of the cursor. Page break mode is the same as edit mode but displays page breaks as two parallel lines across the screen, with a number at the right indicating the number of unused lines. Screen formatting is a little slower in this mode, but the system remains dynamic; i.e. as you change the text or insert new page breaks manually, the rest follow. This is in stark contrast to AppleWriter and AppleWorks, where the page breaks have to be viewed, then edited, then viewed and so on. This all makes page formatting very easy not the aggravating, paper-wasting process so many of us are used to.

From the edit mode, it is possible to transfer text to and from other files and cut and paste text within the file. If the text to be cut exceeds the memory capacity of the machine, you are presented with the options of removing the memory-resident help file to create more room, to save the cut text to disk, or to cut without saving. If you have RAM configured as a RAM disk, it automatically saves the text as the file CUT.TEXT on the RAM disk.

Other powerful features available in edit mode include automatic indentation and paragraph numbering (this can act as a mini-outliner), automatic date insertion (which can also be dynamic), a calculator function and word look-up from the dictionary.

Values/Print Menu

This is accessible either from the main menu or from edit mode, and is used for setting up the page and printing parameters. With AppleWorks and AppleWriter, setting up such commands is usually a confusing affair, and it may be necessary to manually calculate the resulting page area from the margin and page length parameters. In Fulltext however, no such problem exists. On the screen is a little picture of a page with arrows visually indicating the function of each parameter, and the current value. This includes page length, width, all four margins, headers and footers. In other areas of the screen are options for changing the characters per inch in each of normal, condensed and proportional mode (obviously this has to be set to a value which is compatible with your printer), lines per inch and page numbering options (including roman numerals). Three other sub-menus are accessed by pressing OA-A(ssociated files), I(nterface values) and F(ormats). Associated files allows you to chain your files, incorporate mail-merge files and specify particular character or definition files to go with the current text file. Interface values provides the option of changing the MSB (most significant bit), interface ROM, line feeds, top of form and so on. The format options is another powerful little feature of Fulltext. Essentially, it allows you to define a particular format or style for use within a document. The parameters which can be varied are the lines per inch, characters per inch, justification and left and right margins. Up to five separate formats may be defined and used within a document, allowing a whole host of formatting to be carried out using

only two keystrokes. An example of where this may be used is when writing a report which has to be double-spaced with a one inch margin on either side, but any quotations used have to have margins indented two inches and be single spaced. Actually, one useful feature which is not present is the relative positioning of the margins, such that one could specify that the format margins had to be one inch greater than those of the main text rather than an absolute value. This is possible using AppleWriter.

Utilities

Pressing "U" from the main menu displays the utilities (sub)menu. These are the character editor (for the alternate graphic character sets), disk formatter, DOS 3.3 file loader (don't Spacific Software think of everything....?), file transfer, word sort, ramworks installer, communications, dictionary utility (allowing the creation of an empty dictionary or the expansion of an existing one), mail-merge and spelling checker. There is also the option of typing "U" again to engage additional utilities. Each one of these is a disk resident (on the same disk as the main program) binary file. I will only be discussing the last three of these.

As with word lookup from the edit mode, the spelling checker requires the dictionary disk (reverse of the main disk). The dictionary occupies the complete side of a 5.25" disk. In fact it occupies a bit more than a normal ProDOS formatted disk, so the disk has a specially modified header. This means that to enable transfer of the dictionary file to another 5.25" disk, a disk copy rather than file transfer utility has to be used. However, the dictionary can be transferred to a larger storage device (3.5", RAM or hard disk) as a normal file. Unlike in Sensible Speller, a dictionary remains a constant size of 276 blocks no matter how many words are within it. This does not present too much of problem on storage devices bigger than 1800 blocks, but does seem to use up precious disk space when using a 5.25" floppy. Like Sensible Speller, the entire dictionary is read during proof reading, but unlike Sensible Speller, the document is retained in memory. So when you wish to look up a word, no disk access is required. Although there is no word suggestion facility in Fulltext, one can use various wildcards during word lookup to determine the correct spelling. Oh yes - another bonus - the dictionary is specific to the county where it is marketed i.e. English! There is the option to create your own dictionary, but when words are saved to it, it does so directly to disk (slow on a 5.25" disk) and thus unlike Sensible Speller, there is no option to verify your words. However, also unlike Sensible Speller, since it is extremely easy to add and delete words from the dictionary, this is not really a problem. So while the Fulltext speller may be a bit limited when compared to a specialised package like Sensible Speller, it possesses a few features that Sensible Speller does not. Also, the fact that it is integrated within the package, makes it a much better option (due to the convenience and the fact that text formatting codes are ignored). I have rather skipped over the commands within the speller, but suffice it to say they are what one would expect from a spelling-checker.

Selecting mail-merge for the first time requires you to select how many fields you wish to define (up to a maximum of 20). When you enter the name of each field, ending it with an "=" allows whatever you type after to be set as a default. It is very easy to use, and like the text editor, allows proportional scrolling through a document by using OA-1 to 9. The file created by mail-merge is defined in a text document (within the values menu) and used in much the same way as an AppleWorks database, except either a tables (using absolute tabs) or a labels format is created within the text editor, with the required fields within square parentheses. Commands for find and replace work in the same way as in the text editor and there are also several "boolean" options for selecting which records should be printed. Up to two different mail-merge files may be linked to the text editor document for printing. As with files created with the text editor, the mail-merge files are saved as ASCII text. This means that it is essentially compatible with most other packages (since they allow ASCII files to be imported). Coupled with the very powerful replace command (allowing you to work with tabs and carriage returns), data transfer between, for example, a mail-merge file and a database package on the Macintosh is very straightforward.

Fulltext has been designed in such a way that as new utilities are developed, they may be accessed under the additional utilities menu (typing "U" from the utilities menu). The current version I am using (3.1.8) presents the options of S)etting system defaults, G)raphics editor (see below), C)apture catalogs and F)ulltel (Videotex). The last two of these are extra binary files that are available on the Companion disk (see below). Setting the system defaults allows the specification of some of the characteristics of Fulltext. These include setting the proportional defaults for specific makes of printer, enabling interrupts (i.e. allowing access to the IIGS control panel), removing the date suffix of the various date options and setting defaults for the editor. The latter facility may be most useful when dealing with a classroom situation and the teacher may wish the text to always appear in enlarged or "jumbo" mode, without the children having to type in the appropriate CA- command. Changes made in the system defaults become effective immediately and can be saved as the new defaults by typing OA-S.

One slight disappointment. Changing the display colour via the control panel will not take effect on quitting back to Fulltext, as it is using the graphics screen (although any change made to the border will be retained). Since I prefer white text on a black background anyway, this does not bother me. However, if you must have pink text on a light green background, then Fulltext, or at least this version, may not be for you!

Graphics

Graphics may be inserted into the text during edit mode. Although, no true wraparound takes place, the graphic remains in the position that it was inserted in the text. The graphics are contained in a system file (PRO.PICTURES) that is loaded on booting. The file may contain up to 26 pictures, but beware, these consume memory - no problem if you have extra memory available, but on a standard 128K system, the more pictures there are, the less the room for the text. Since I rarely use pictures, I found the best solution was to create an empty PRO.PICTURES file: As long as the file is present on booting the system, pictures may be inserted from other picture files as they are needed.

The picture may be selected in either a short or tall format, and may be subjected to jumbo and/or enlarged modes to increase its size. It is not possible to use right- or centre-justification in area near the

graphic (although fill-justification via the values menu is viable.

The graphics utility allows you to display and edit the current set of graphics, load a complete picture file or just one picture from a picture file and save a picture file. It also allows you to add a graphic directly from a "Print Shop" disk, although the manual states that the slight difference in size of the graphics (Print Shop 88 X 55 dots; Fulltext 91 X 60 dots) may necessitate some editing of the picture.

Fulltext Companion

As previously mentioned, a companion package (called "Fulltext Companion") is available for a meagre sum to further enhance the Fulltext package. The companion has four additional utilities (in the form of binary files) which may be transferred to the system disk: (a)An additional system file which allows the use of the mouse for selecting and/or cutting text, as well as the rapid cursor movement over the screen. (b)A utility for "capturing" catalogs. When selected, an entire volume and all its subdirectories are read into the text editor ready for printing, editing or just close scrutiny. There is the option of the files being sorted by type (then alphabetically within each group), alphabetically or not sorted in any way prior to being read into the editor. All directories are displayed in expanded text and all file parameters are shown. (c)A videotex utility (called "Fulltel"). I do not indulge in communications, but the manual informs me that such services as Myriad, Aditel, Prestel and Viatel are accessible, with a comprehensive list of configuration options and are displayed in glorious technicolour (if you are fortunate enough to possess a colour monitor). (d)An advanced graphic utility. This has all the features of the graphics utility that comes with the standard package, but in addition supports the use of the mouse, allows the construction of lines, rays, boxes, ovals and triangles as well as various "reflection" options. If you definitely have no use for the mouse, videotex, never need to catalog your disks and never need graphics, then do not bother getting this add-on. However, even if you need one of these extras, it is worth purchasing the Companion. My only gripe lies with the graphics editor. Unlike the standard version, the enhanced graphic editor is displayed in inverse. I always feel that the benefit of seeing solid lines on a light background is overshadowed by the strain on the eyes, especially when the rest of the package performs in standard "white-on-black" mode. It is a pity that this was not an option which could be configured. I was also disappointed with the border facility on the enhanced graphic editor: Any combination of up to eight graphics may be printed as a border. However, this is the one (and in all fairness I stress also the only) instance where the WYSIWYG style of Fulltext falls flat. Fair enough, the borders are not displayed on screen. But worse, the border has to be printed out, then the paper re-fed and the text printed! This may sound petty but it really is not up to the standard that the rest of the package adheres to. Perhaps this is something which will be changed in a future version.

Summing Up

As well as all the features outlined above, it is the "modularity" of the system which is one of the strongest features of Fulltext - everything is accessible. No anonymous SEG files to baffle you; all the various components are visible in a catalog. Also, the way the control codes are accessible via the definitions file makes it a simple task to customise any make of printer (including laserprinters) for the package.

I feel a most important niche where Fulltext may exist is in an environment where there may be several IIGS's along with several IIe's. It is most likely that the arrival of GS Works (and perhaps other packages running under GS/OS) will provide a very sophisticated word-processor for the IIGS. However, it is worth remembering that the package will be GS specific (and probably will require an additional investment of 256K?). What will happen to all the IIe's? Of course files may be transferred as ASCII between packages, but reformatting is an additional nuisance. Fulltext provides the ideal solution as a package that uses all the advantages of a IIGS system, and yet is equally at home on a 128K IIe.

The package requires an Apple IIe with 80 column display and 128K, a IIc or a IIGS. My present system is a IIGS 256K monochrome system talking to a Panasonic P1081 printer via a Cirtech "Champion" interface card. I have however, used Fulltext with equally good results on IIe's and Imagewriters. It is ProDOS based (although a DOS version operating on 64K is available) and is a steal at £85.00! (equally the "Companion" at £12.00!).

I have tried to keep this review as short as possible, highlighting the features which I was personally most impressed with. I have not covered the communications part of the package, since my Apple is not set up for communications. However, from reading the manual, most aspects of communications appear to be covered. I should also stress that what I have covered here is the tip of the iceberg of features that this package has to offer. To gain a more complete picture, contact Spacific Software for details, they can provide a concise "fact sheet" covering all aspects of the system. It is important to remember that the ultimate function of any word processing package is to save time. For myself, Fulltext satisfies this criteria over and above AppleWriter and AppleWorks. Since this review may appear too favourable, I shall end on one bad point! The maximum file size (31K) is less than that of AppleWorks (although this may be increased to up to 55K by using a memory card). This is however of little consequence since files may be easily chained (without limit). Still, forget this minor gripe. In their advertisement, Spacific Software claim that Fulltext Pro-80 is a "breakthrough" for the Apple II - I could not agree more.

Greg Carson

❑ Due to the limitations of the fonts on the LaserWriter, we have had to replace the Open and Closed Apple symbols with "OA-" and "CA-" respectively. These were correctly printed by Fulltext in the original proof. Ed.

info

Product : Fulltext Pro-80
Publisher : Spacific Software
Available from :
Spacific Software
PO Box 58
Morpeth
Northumberland
NE61 1EQ
Price : £85.00

Value :
Performance :
Documentation :

Hardcore Pips

We take a look into the archives of Apple2000 with cuttings from1981

❑ Those of you have known Apple2000 for some time, will know that we were originally called The British Apple Systems User Group, or BASUG for short. Our magazine in those days was called Hardcore.

We are not sure quite when the magazine was born, but we do have a large box of discs that holds most of this early material. The format of these files was in AppleWriter I Dos 3.3 format.

We had to first convert these files with AppleWriter II into true Text files, then transfer with Copy II+ into ProDOS. The files were then transferred to the Macintosh with Passport and finally the page has been set with PageMaker. This may seem a convoluted process, but as only Text was involved it actually took very little time at all.

The following pieces are from Hardcore No 3 the first disk of the set, and we think date from around June 1981.

Letters Page

Livingston
West Lothian

Dear Editor,

Thank you very much for Hard Cores Nos 1 and 2, very useful and enjoyable reading... For me though the several pages on games (especially in No 2) were wasted space. I didn't really understand the "Applesoft Input Anything" routine article in No 1. I just use:

```
50 A$=""
60 GET X$
70IF X$ <> CHR$(13) then
   A$=A$+X$:GOTO 60
```

Instead of `50 INPUT A$` when I want to input characters such as commas and colons. It also works from disk text files. Isn't this simpler than the version you printed? If you want to allow the back space arrow to function as 'input' just insert

```
65 IF X$ = CHR$(8) THEN A$ =
   LEFT$(A$,LEN(A$)-1)
```

Of course it is also more convenient to have the input appear on the string if input is from the keyboard:

```
63 Print X$;
```

accomplishes this quite easily, including back spacing.

The programs BASUG sent me to convert PET programs to Applesoft directly from a PET Tape are wonderful. It alone is worth a year's membership. There have been a couple of failures, but I strongly suspect that misalignment of the recorder head of the PET cassette unit is to blame.

Finally, there is nothing to do with educational use in HARD CORE. If anyone would like to share an interest in this, including software exchange - they are welcome to contact me at Dean's Community High School, Livingston EH54 8PS. About 30 secondary schools in the area have Apples.

Graham Dane.

Beginners Page

MORE PEEKING AND POKING
By John Sharp

In the last HARDCORE we began to look at PEEKing and POKEing. Before continuing it is worth a few minutes to consider how to save yourself a lot of work when you have a list of POKES to enter into a program.

If they are in a sequence as is most likely, why not let the computer do the work and use a loop to do it:-

```
10 FOR N = 768 TO 776
20 READ P
30 POKE N,P
40 NEXT
50 DATA
   1,32,221,221,206,0,3,248,96
```

It will not have made much less work in this case but it will do so when there are many more POKES to do.

Now so far we have been mainly POKING. How can we use PEEK in a program to let us do something constructive. One way might be to see if you have an APPLESOFT or PALSOFT machine, i.e. an APPLE or an ITT2020. One way is to look into a location you know to be different; Ian Trackman suggests location 62447. If you PEEK (62447) and get a number other than 0 then you are running on an Applesoft in ROM machine.

PEEKing is often useful to find out other things in programs. It could be used to find out if you are in FLASHING or INVERSE or NORMAL mode when you want to PRINT a new string. This uses the location we dealt with last time. For example:-

```
10 X = PEEK(50)
20 IF X = 255 THEN PRINT "YOU
   ARE IN NORMAL MODE"
30 IF X = 127 THEN PRINT "YOU
   ARE FLASHING AT ME!!"
40 IF X = 63 THEN PRINT "YOU
   ARE INVERSE"
```

This may not be common occurrence but it could be useful if you were printing in different modes and wished to know which one you used last. Another case might be to test which key someone had pressed last. If you PEEK (-16384) then the value you get will get will be the ASCII value of the key pressed. This is illustrated by the following:-

```
10 FOR N = 0 TO 1000
20 X= PEEK( -16384)
30 IF X > 127 THEN PRINT
   CHR$(X);: POKE -16368,0
40 NEXT N
```

The POKE -16368,0 is to reset the switch to read the next character typed in . You could use it to see which was the LAST CHARACTER typed on the keyboard, or indeed if any had been typed in whilst the program was running, without having to rely on the key being pressed at a specific time when the program requests it.

This suggests the following program for a simple reaction timer.

```
10 TEXT : HOME
20 FOR N = 1 TO RND (3) * 4000
   : NEXT
30 PRINT "READY"
40 FOR N = 1 TO RND (3) * 4000
   : NEXT
50 PRINT "STEADY"
60 FOR N = 1 TO RND (3) * 4000
   : NEXT
70 PRINT "GO....."
80 POKE -16368,0
90 FOR N = 1 TO 300 : X= PEEK
   ( -16384) :IF X > 127 THEN
   GOTO 110
100 NEXT
110 PRINT "YOUR SCORE WAS
   ";1000 - N ; " CAN YOU MAKE
   IT LARGER ?"
120 END
```

A few comments would help those who do not understand. Lines 20,

40 and 60 put a random delay into the program between each statement. The resetting of the keyboard in line 80 stops you cheating by pressing a key before the "GO" comes up.

POKING THE HI-RES SWITCHES

Have you ever tried to play a game and found instead of the correct graphics page the one from the graphics game you played before comes up. This is particularly common with the Integer games on the Software Distribution Library Disks. It means the switches are set wrongly for jumping between the various pages. These are POKE switches. If you read the APPLESOFT MANUAL it is confusing to say the least. An easier summary as follows is not foolproof because the switches are interdependent, but it usually works.

```
POKE -16304,0 ....TEXT TO
  GRAPHICS
POKE -16303,0 ....GRAPHICS TO
  TEXT
POKE -16302,0 ....GRAPHICS &
  TEXT TO FULL GRAPHICS
POKE -16301,0 ....FULL GRAPH-
  ICS TO GRAPHICS & TEXT
POKE -16300,0 ....PAGE 2 TO
  PAGE 1
POKE -16299,0 ....PAGE 1 TO
  PAGE 2
POKE -16298,0 ....LO-RES
  SWITCH
POKE -16297,0 ....HI-RES
  SWITCH
```

The last two are the most relevant ones if you have the trouble with being in the wrong type of graphics. Just press CTRL-C and type in the relevant POKE followed by a RETURN and rerun the program.

THE ESCAPE KEYS AND OTHER EDITING FACILITIES

If you are a beginner you have probably glanced at the REFERENCE MANUAL and thought "Yes I'll look at that some other time, maybe in a few years time". Well there are some pages you might understand that are not in hieroglyphics. For example the pages on the ESC codes for moving the cursor on pages 34 and 35. Although most AUTOSTART ROM users are familiar with ESC IJKM they are not always aware of the ESC DBAC set. They give you similar movements, but with one difference. If you press ESC ABCD then the next key you press actually works. It is not a "get you out of using the ESC key sequence ". If you are a poor typist and are continually mistyping CATALOG titles, you probably use the ESC IJKM keys to run up the Catalog and then along the row with the -> key. How many times do you forget to press R for the RUN twice or use some other means of getting out of the ESC sequence only to find you have typed UN MYPROGRAM and had SYNTAX ERROR come back at you. Well if you get into the habit of using ESC D as the last ESC character to move the cursor onto the line you want, there should be no such trouble.

Whilst on such facilities, do you know how to slow down or temporarily stop listings. A slow listing can be achieved by typing SPEED = 180 or some other number less than the normal 255. When you then LIST the letters will come out slowly. The lower the number the slower; with SPEED =1 they take a very long time. Remember to reset to SPEED = 255 before you run the program.

To slow the listing down use CTRL S. Type LIST and press RETURN as normal. Then put one finger on the CTRL key and keep it there. Then press the S key. Each time you press it the listing will either move or stop. In order to get back into BASIC type CTRL C. THIS WILL NOT WORK ON AN APPLE WITHOUT THE AUTOSTART ROM (includes ITT 2020) or if you are listing an INTEGER program.

Zany Golf

Scott Freeman hangs up his drivers for the putting green

There are now so many golf games around for the IIgs, that I was rather put off by the title of this one. It was the name 'Kevin Harvey' on the pack that made me look further. Kevin was responsible for Music Construction Kit, and more recently Marble Madness.

Zany Golf does not take place at St Andrews, you are more likely to be at Blackpool, for it is no less than a crazy putting course. However, there the similarity stops.

Zany Golf contains 10 holes. Each hole is in itself a complete game. We tilt at a Windmill, dodge the bouncing Hamburger, fly the Magic Carpet and play a complete game of PinBall.

All the while we are given a superb musical accompaniment from the IIgs sound chip. Although the music has not been digitised, I could have sworn that there was a complete orchestra and choir out there! I connected the IIgs through a Sonic Blaster to my HiFi, and was surrounded by the superb music.

I have played many games on many machines, but Zany Golf takes all the awards for the best game I have seen. It is not only that the game conception is so good, but that with the excellent graphics, the music and the way that at each turn you are suprised by new and diabolical courses, the game is almost perfect in every detail. My only complaint was that you have to start at the beginning every time, there is no provision for saving the game half way through.

The great achievment of getting to level 9 and dodging the energy beams, was only surpassed by reaching the final level 10. Here, and this is a nice touch, is a game of Pong which echos the very first computer arcade game. However, I must confess that I have not completed this last stage. How on earth you can dodge the flashing squares is a mystery to me so far.

The graphics in Zany Golf deserve a special mention. They use the IIgs screen in a way I have never seen before. I could have sworn there were not that many colours available on the Super Hi-Res screen.

It is going to be difficult from now on to look at games on the IIgs without thinking of the standard that Zany Golf has now set.

This game is a must, I found it addictive to the extent that I keep running it when I should be doing other things.

Everyone I know is playing it. Don't be left out, get a copy of your own. But please tell me if you actually get to the very end, I would love to know what happens then!

Scott Freeman

info

Product : Zany Golf
Publisher : Electronic Arts
Available from :
Bidmuthin Technologies
Brent House
214 Kenton Road
Harrow
Middlesex HA3 8BT
Price : £29 + VAT

Value :
Performance :
Documentation :

SPREADTOOLS

Peter Davis reviews yet another TimeOut accessory for AppleWorks

SpreadTools is another TimeOut manifestation from Beagle Bros coming in new style flat pack, and containing six entirely new accessories on both 3.5" & 5.25" disks including the usual mix of examples, macros, promotional material and backed by an excellent manual which if anything is of a better quality than previous offerings. In addition the package comes with what seem to me to be the latest versions of TimeOutV2.1, Utilities V2.0, and Data Converter V1.5.

The six new accessories in SpreadTools are of varying importance ranging from Quick Columns which enables you to define the column width of a highlighted area using numbers rather than using the <Apple and Arrow> key combination. For example if you highlight 6 columns and enter <9,4>; the 6 columns will be set alternately to 9 and 4 characters width. Formula to Value and Rows <—> Columns do just about what their names imply. The remaining three utilities are in a rather different class and quality. Analyzer gives you six different ways of seeing just where the construction of your spreadsheet has gone wrong. CelLink can be programmed to collect a summary of data from up to 35 other spreadsheets on data disk or the desktop, either importing or chaining them together. Block Copy simplifies the process of copying data from one spreadsheet to another in an elegant and simple way, without the same chance of burying yourself in the morass of problems that just never seemed perfectly worked out within AppleWorks. Copying between spreadsheets till now has lacked the "Overlay" rather than an "Insert" facility.

In spite of the fact that I was sent 2 versions of SpreadTools there were problems with one module of "Analyzer", suggesting that development had taken place on a GS.

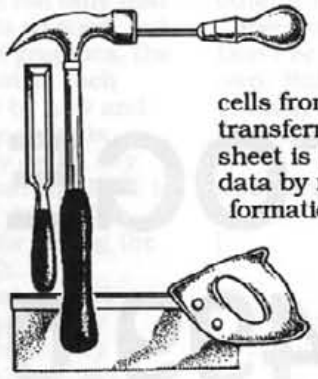
Analyzer

The object of this creation appears to be make it considerably easier to scan for errors and gives you six ways to do it.

Scan for Errors lets you know where the errors are, Cell Cross References does what it says, you can get an overall (Bird's Eye) view of the whole spread sheet compressed into a screen, Track References gives a visual indication of the cells referenced by a specified formula. *See Figure 1.*

1. Scan for Errors good idea. The kind of screen you get amply displays its capabilities. *See Figure 2.*

Unfortunately option 1 contains some bugs, alleviated almost completely when an update came remarkably quickly from Beagle. I would emphasize that the remainder of the elements of this part of the package all work perfectly, and even this package works correctly in part. No doubt Beagle Bros will have solved this glitch by the time you read this article.



2. Cell Cross Reference works well and displays all formula references in the form of continuous listing. This tool is best used with the aid of the printer. (Track References does the same job, but for a selected formula and therefore much more useful as a screen tool)

3. Bird's Eye View is quite useful for finding the extent of the spreadsheet at a glance, all compressed to a single screen.

4. Adjust column widths give an auto expansion of widths for each column sufficient to exactly enable a screen or printout of the normal spreadsheet in zoomed form so that all formulae can be shown in full. Then there is a user facility for instant restoration, on command, of your previous set width (layout) without new instruction from you. ie the package remembers your old settings before you called it to get the expansion.

5. Track References intelligently highlights the cells that are referred to by a specific formula that is highlighted on the screen, presenting the areas that are referred to by a specific formula which you can choose.

6. Show Cell Values entirely expands the spreadsheet into a continuous list of cell (value/label), actual value or formula fully expanded. In other words everything that is in the spreadsheet can be printed out systematically (A1-An) then (ZZ1 -ZZn) in the form of a continuous listing. Although initial values are shown, subsequent results are not shown, only formulae, which is not unreasonable. In my opinion this is a useful facility giving information that you could never get from AppleWorks. Normally the printout covers the whole spreadsheet, but you can get limited control of the area covered in the printout by starting the option some way through the entire sheet.

CelLink

CelLink can take up to 175 values from any number of SpreadSheets and update those values to a "Link Report" file which contains the definitions of the spreadsheet file names and the cells from which the data is to be transferred. The importing spreadsheet is told where to put or get its data by means of two columns of information on the right hand side of the work area. The column titled "Imports" to hold the values it found. The column titled "Links" is used to specify where to get the cell in a specified spreadsheet references in the form "B5(Jan Sales)".

In this case B5 is the cell reference and (Jan Sales) is the file it comes from.

The location of Source spreadsheets must be specified before you start, by using "utilities" to define where the files are. The options are; the desktop, the triple desktop (from PowerPack) or from your AppleWorks data disk. The source files must be fully calculated prior to use, the importing file may force a

specified number of recalculations by inserting the word "recalc". The number of times the word appears in the Link column specifies required number of recalculations. The label "End" signifies completion of the process.

It is also possible to chain import files, so that when one file has done importing data, CelLink moves on to another file. To do this, the label "End" is replaced by "Chain" with the name of the new import file beneath the chain label.

In effect CelLink gives a number of possibilities for summarizing data from a number of spreadsheets developing monthly financial data into quarterly or annual reports. A Linking routine can easily be composed (programmed) for a complete application.

The example *Figure 3* indicates the layout required prior to the import of data.

Block Copy

In standard form AppleWorks will copy by "Row" or "Column". It will not let you copy a block from or to the Clipboard, and you only have two options of "Relative" and "No Change" copying. Furthermore extra columns or rows are created when making a copy, which is not always very convenient.

Block Copy allows you to copy any rectangular area of the spreadsheet rather than define rows or columns. This may sound simple but when you add the three new copying options and the capacity to overlay rather than insert you have very considerably

enhanced the AppleWorks Spreadsheet and potentially saved yourself a good deal of hassle, which can result from the relatively rigid clipboard copy.

The screen shot in *Figure 4* illustrates the options presented for Block Copy "Within theworksheet".

As you will see you are offered rather more options by Block Copy "Within the worksheet". "All relative" simply means you can place the area defined any where within the worksheet. "No Change" is exactly comparable with normal AppleWorks, except you have the option to place the block where you wish. "Column Fixed" has no counterpart in Open-Apple-C. This option will reassign the row as in "All relative" but adjusts the column part as if you had chosen "no change". This is useful if you want copy a sequence of formulas to new rows, while leaving the formulas to refer to the data in their original relative columns. Likewise "Row fixed" copying makes no change to

Figure 1

```
File: Analyzer Sample        ANALYZER    Escape:Review/Add/Change
═══════════════════════════════════════════════════════════════

        ┌──────────────────────────────┐
        │  1.  Scan for Errors         │
        │  2.  Cell Cross Reference    │
        │  3.  Bird's Eye View         │
        │  4.  Adjust column widths    │
        │  5.  Track References        │
        │  6.  Show Cell Values        │
        ├──────────────────────────────┤
        │  Contains circular reference │
        │                              │
        │   10 Formulas                │
        │   14 Values                  │
        │   12 Labels                  │
        │    8 Repeated labels         │
        └──────────────────────────────┘

    Spreadsheet Analyzer 1.2, Copyright 1988,1989 by Alan Bird
─────────────────────────────────────────────────────────────
Type number, or use arrows, then press Return          45K Avail
```

Figure 2

```
File:  Analyzer Sample    SCAN FOR ERRORS      Escape: Analyzer
═══════════════════════════════════════════════════════════════
C1     Forward reference - ( 2) calculations required
           E11
E11    References a cell without a value
A14    NA value
B14    NA formula
B16    ERROR value
A18    Circular reference
           B18
           C18
B18    Circular reference
           C18
           A18
C18    Circular reference
           A18
           B18


─────────────────────────────────────────────────────────────
Use arrows to scroll, A-P print, A-C copy to clipboard   44K Avail
```

Figure 3

```
File: Link Report        REVIEW/ADD/CHANGE     Escape: Main Menu
═══════D═══════E═══════F═══════G═══════H═══════I═══════
   1|                                  Imports Links
   2|                                          b5(Link Bikes)
   3|                                          c5(Link Bikes)
   4|                                          d5(Link Bikes)
   5|                                          e5(Link Bikes)
   6|     3rd     4th   Year-end totals        b5(Link Accessory)
   7|                                          c5(Link Accessory)
   8|       0       0           0              d5(Link Accessory)
   9|       0       0           0              e5(Link Accessory)
  10|       0       0           0              b5(Link Equipment)
  11|       0       0           0              c5(Link Equipment)
  12|                                          d5(Link Equipment)
  13|       0       0           0              e5(Link Equipment)
  14|                                          b5(Link Clothing)
  15|Out CelLink to import data                c5(Link Clothing)
  16|d in column I.                            d5(Link Clothing)
  17|                                          e5(Link Clothing)
  18|                                          End
─────────────────────────────────────────────────────────────
D13: (Value) @SUM(D8...D11)

Type entry or use A commands                      A-? for Help
```

the row reference but adjusts the column reference. "Query off" tells the copy command to stop asking how to handle each cell reference. and just handle all like the last one.

The partial screen shot in *Figure 5* illustrates the options presented for Block Copy "Fromclipboard".

As you will see you get a few more options than with conventional clipboard copies. "Formulas and values" are always relative but perhaps the main differences are that data copied always overlays any existing data or space without creating new columns or rows. "Values only" differs in the same way. Perhaps the overlay feature is most powerful in the "Add values and "Subtract values" modes where standard portions of several spreadsheets may be successively added or subtracted cumulatively. Thus it would be possible to build up repetitive results with relative ease.

Figure 4

```
File: Block Sample          BLOCK COPY    Escape: Review/Add/Change
=======A=======B=======C=======D=======E=======F=======G=======H===
  1|                Aye       Bea        Ci       Dee     Total
  2|              ------    -------   -------   -------  -------
  3|Won               1         2         4         8        15
  4|Too               2         4         8        16        30
  5|Three             3         6        12        24        45
  6|Fore              4         8        16        32        60
  7|              ------    -------   -------   -------  -------
  8|Total            10        20        40        80       150
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
-----------------------------------------Query off: All relative--
B8: (Value) @SUM(B2...B7)
@SUM(B2...B7)
Reference to B2?
        All relative No change Column fixed Row fixed Query off
```

Figure 5

```
 18|Total          10        20        40        80       150
 19|
 20|
-------------------------------------------------------------------
A20
From clipboard?
       Formulas and values Values only Add values Subtract value
```

Formula to Value

Formula to Value creates a constant value from a formula which could be useful under certain circumstances.

Rows <—> Columns

Rows <—> Columns will copy a row to a column or column to a row. This is a simple but useful facility which works well.

Conclusions

Analyzer in "Scan for errors" mode caused my IIe to crash instantly in its original form. I later found that this seemed to happen on any IIe with extended memory. No problems occurred on the IIGS. Beagle were very rapid in coming up with a revised version, which was reliable but did demonstrate a couple of bugs, failing to show <Forward reference - (2) calculations required E11> and showing errors which were not present <B11References a range with no values>. All other modules performed perfectly both with AppleWorksV2.0 and V2.1. I doubt these problems will be around for long, and are in any case trivial by comparison with what is contained in the whole package.

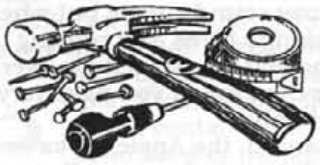
Of the features contained Block copy really give AppleWorks what it always should have had, the ability to overlay. The concept of the Analyzer is excellent and will save me some problems in the future. Both Block copy and CelLink take out the need to create giant spreadsheets which are not always the most convenient way of getting concise reports. CelLink is potentially a powerful accounting aid. It does not fall on its back if it fails to find the next file it needs (it provides a convenient list) and contains enough flexibility to build in an Audit trail which adds to its accounting potential.

Acknowledgements

Dave Ward of the Hot Line and John Robertson of Cirtech (UK) Ltd. who did what I could not do with my own IIe and IIc, by using equipment I do not have.

Screens were created using "Screen Shot" by Mark Munz from the MacroTools II disk.

PETER DAVIS



info

Product : SpreadTools
Publisher : Beagle Bros
Available from :
Bidmuthin Technologies
Brent House
212 Kenton Road
Middlesex
HA3 8BT
Price : £59.95 plus VAT

Value :
Performance :
Documentation :

Routine Machine

Tony Game takes a nostalgic look at Basic programming and finds the Routines are still available

When, aeons ago in, "Personal computer development time", which is a sort of opposite to geological time, the venerable DOS 3.3 was replaced by ProDos, not all of us were especially delighted. For one thing we were used to DOS and its little oddities, for another we had just grown accustomed to the new fast variations of it such as Diversi-Dos, and had not had time to fully absorb, let alone utilise, the quite incredibly fast "Speed Loader" of Cornelius Bongers, of which the club had acquired the distribution rights. The speed of loading of this utility was such that I myself have never seen it equalled, and indeed it is as fast as many of the older hard disks. However, as the bigger disk drives came along, and hard disks were no longer the impossible price they had been, the limitations of DOS began to be increasingly irksome, and ProDos took over practically completely. One of the saddest consequences of this was that a number of utilities which came out at about the same time as ProDos, did not get the appreciation or use that they deserved. For my money the chief of these was "Routine Machine" by South Western Data Systems. Programmers in Applesoft had always been aware that it was one of the first implementations of Basic, and showed it. Being present in the Apple's ROMs meant that it was frozen together with its many limitations and few bugs. However by this time all these limitations and bugs were well known, and simple ways round them had become common knowledge. The only really irksome limitation was the two valid character restriction on variable names, and of course, the very pedestrian speed of the interpreted language. As they advanced, programmers in Applesoft began to utilise machine code routines for various jobs in almost every program they wrote. Eventually this became so universal that the problem arose of where to put these routines where they would be safe from both Basic and DOS, and from where they could be easily called by the running program. The ubiquitous CALL 768 became almost another Basic keyword. Unfortunately the space available at $300 was decidedly limited, and very soon became insufficient. It was this problem of where to put machine code routines for calling from within the program that "Routine Machine" addressed, and did it in a way so elegant, that I have seen few other applications for the Apple that approach it. The idea was to locate as many routines as the programmer required at the end of the Applesoft code, preceded by a small routine which knew about them, and arranged for the right one to be utilised at calling time when there were a number in use. In fact the only limitation on the number to be used was the available memory. The arrangement was so flexible that no-one knew these routines were there. The program could be edited exactly as normal, and the routines moved up and down just as required with no bother to the programmer at all. All this was achieved by a single line at the start of the program and the small Routine Machine code at the end. The routines were saved to disk just as a normal Applesoft program would be, and the only sign of the presence of the machine code was the greater length of the program. The operation of attaching the machine code routines to the end of the program could hardly have been simpler. Another program sat safely above HIMEM from where it could be called at any time, and a menu was displayed with every option that one could possibly need. The routine(s) were selected, named, and loaded all in the one operation. After this one left the menu, and back in the program all that one had loaded was available for instant use, by using the ampersand, and the name one had given the routine one wanted. The only thing that ever detached the machine code that I ever discovered was renumbering, and even this could be avoided by using the renumber program that South Western Data put out themselves. The number of routines available was quite incredible. Naturally some were more useful than others, but the number was such that there really was something for everyone. The initial purchase of Routine Machine itself gave one some 30 routines, and additional disks could be obtained with many more. There were well over a hundred altogether. Additionally one could write one's own. The only limitation when doing this was that the routine had to be relocatable. Even this was not strictly true, since utilities were provided to call routines loaded at specified locations such as $300, but doing this to some extent spoiled the elegance of the procedure. Once one was used to what was available one's Applesoft programs became utterly different. Incredibly fast searching and sorting of large arrays was probably the first thing most people did. Then there were wonderful INPUT routines which did everything that the most sophisticated commercial database programs did. Menu selection commands, RESET trapping, and a plethora of visual and sound effects were obtainable.

In short the Routine Machine completely revolutionised Applesoft programming, and made one wonder whether any other language would ever be needed, or able to provide half as much. Alas much of this was damaged if not completely spoiled by the advent of ProDos. Although one could write one's programs using "Routine Machine" under DOS, and then transfer them to ProDos where the very great majority worked perfectly, this obviously made a mess of the elegance of the program, whose beautiful simplicity was one of its great attractions. However help is in sight. Roger Wagner publishing of 1050 Pioneer Way, Suite P, El Cajon, CA 92020, USA., publish a series of Toolboxes, which I can confirm are the same as Routine Machine. These disks contain the toolbox for DOS on one side and ProDos on the other. I have seen the "Trial Size Toolbox", and can confirm that it is the same thing as Routine Machine with very minor changes. There do not seem to be quite as many routines, and the superb documentation that was such a splendid part of the original program has now gone in favour of a program on the disk to print out a 50 page manual. However fans of Routine Machine who dropped it at the advent of ProDos, and Applesoft programmers looking for extensions to their favourite language, now have hope again. I have not seen the ProDos interface program, but assume that it is similar to the one for DOS. I would imagine, and hope perhaps to be able to confirm this later, that most of the routines could be copied straight from DOS into ProDos, and would work just the same. I have been delighted to know that Routine Machine is not now defunct as I had feared, and hope that many of you will buy this superb utility, and so keep it alive for the very long time that it deserves.

Tony Game

Time on Your Hands

Bill Hill takes time out to look at two clock cards for the Apple II

This is a review of two clock cards that have been available for the Apple II+ and //e for some time now. I thought it would be a good idea to tell Apple users about them since the information may come in handy. The two cards in question are: the U-CCT from U-Microcomputers (U.K.), and the TimeMaster II HO from Applied Engineering (U.S.A.).

The U-CCT

The U-CCT card is no longer in production, but users may well see them advertised second-hand, or in stock clear-outs by U-Micros. It was by the latter method that I got hold of this card at the end of 1987, for the reasonable price of £35.65. At this price the U-CCT was attractive, even though it does not use the same protocol as other Apple-compatible clock cards, and will therefore not be recognised by any commercial software, e.g. ProDOS. However, there is an example Pascal program in the manual which shows how to set the date automatically in Pascal 1.1 on booting the system.

The card is the normal full-length type and comes with a forty-six page A5 manual. Twenty-six of these pages are a direct copy of the data sheets for the SY6522 VIA chip and MSM5832 clock/calandar chip that are used on the card, and this part of the manual is almost useless since the text is too small and the reproduction poor. The rest of the manual is comprehensive and gives examples of how to set and read the time and date in both Applesoft and Apple Pascal. All the examples assume that the card is in slot 2. The card can be used in any slot except slot 0, and if used in slots other than 2 then a driver disk from U-Micros at additional cost will be needed for Pascal (no software is supplied with the card).

The card is well made and, as with all other real-time clock cards, contains a battery so that the time and date settings are not lost when the Apple is switched off. Setting the time and date is a simple process. Unfortunately, the day of the week is not calculated by the card and so has to be set by the user. Likewise, the user needs to tell the card when it is a leap year. Since both of these are supported by the MSM5832 chip, I cannot see why the designers did not provide them automatically (as the TimeMaster II HO does, for example). The card does support either a twelve or twenty-four hour clock. The U-CCT can also be set up to generate interrupts at intervals of one second. This would be useful if you want to run a particular routine at a precise frequency.

I had purchased the U-CCT for a specific application using Pascal. For this application I wrote a procedure whose sole purpose was to wait for a precise period of time (but without using interrupts). The procedure's argument was the required delay. When using this procedure I discovered an interesting firmware bug: the U-CCT does not update its seconds field correctly on decade boundaries. To illustrate what I mean, consider the following time sequence produced by the U-CCT when read rapidly by a Pascal program:- 09:12:18, 09:12:19, 09:12:10, 09:12:21. As you can see, if the U-CCT is read at exactly the instant that its firmware is updating the seconds field then time goes backwards! This problem does not happen every time, it just depends when the read is performed. I contacted U-Micros, who confirmed my findings and I returned the card for a refund. Since the card is no longer in production there is not much that can be done, but to be honest it is not something I would be too worried about in 99 percent of applications. In my case I needed the accuracy and did not see why I should code around a manufacturer's bug, although a fix in my Pascal procedure would have been relatively simple.

Since the U-CCT is not ProDOS compatible, is not supported by any commercial software, has a firmware bug and does not automatically calculate the day of the week and leap years, I would not recommend it unless you are writing your own BASIC or Pascal programs and are not bothered about these limitations. Still, at the low price that this card is likely to fetch second-hand, you may well find a use for it. I am sure that there are plenty of people out there using it (perhaps you would care to write to Apple2000 and let us know if you are satisfied).

The TimeMaster II HO

This card is still in production and available from any of the Apple // dealers that advertise in this magazine. I got hold of my card second-hand for #36 from a dealer sale. Unfortunately, the manual and software that I got with it were not the latest versions, and to make matters worse the manual was for a different version of the software! Luckily, I later managed to get hold of the latest versions which are normally supplied with the card (two floppy discs are included: one for ProDOS/Pascal, the other for DOS 3.3 - which also has a CP/M MBASIC program on it). I got the manual and discs from Bidmuthin for #20 (full marks to them for their assistance, although they blotted their copybook a little as the DOS 3.3 disc had a corrupt Applesoft program on it, but I was able to fix it by converting the corresponding ProDOS version to DOS 3.3 from the ProDOS disc).

The TimeMaster II HO is smaller than the U-CCT, being just slightly longer than an Apple disk controller card. It can be fitted in any slot other than slot zero (or slot three on the //e). The card has DIP switches which allows it to emulate Mountain or Thunder clock cards. The switches also enable/disable interrupts. Unlike the Mountain card, the TimeMaster II HO provides the year and the day of the week automatically. Like the U-CCT, setting the time and date is easy.

The TimeMaster II HO works with ProDOS, automatically time and date stamping files in the directory. Applied Engineering have also provided a patching program for DOS 3.3 which will allow automatic time and date stamping under DOS 3.3 as well.

Applied Engineering have thoughtfully provided a program on one of the discs which allows you to patch Appleworks so that it boots up with the correct date displayed. The time is also shown in the bottom right hand corner of the screen when using Appleworks.

which is a nice touch. Unfortunately, the date is still in Appleworks (U.S.) format, but that does not bother me too much.

The TimeMaster II HO is the successor to the Timemaster and Timemaster II cards. It maintains software compatibility with the older cards but has extra features (like BSR control, which will probably be of little interest to U.K. users). The card supports interrupts, with intervals of 1/1024 second, 1 second, 1 minute or 1 hour available. Since DOS 3.3 cannot easily be used with IRQ interrupts, Applied Engineering supply a program to patch DOS 3.3 to fix this.

Pascal users are well looked after. An intrinsic unit is supplied on disc which enables you to access the time and date from within a Pascal program. A replacement system startup file is also supplied on disc to set the date automatically when booting the Pascal system. There is enough information in the manual for you to write your own Pascal routines, if you wish (see the attached listing, for example, which is a routine I wrote which does not use the card's firmware to read the time and date).

CP/M users have also not been forgotten. A text file on the DOS 3.3 disc is provided which can be APDOSed across. It is a short routine for inclusion in MBASIC or GBASIC programs to allow them to read the time and date.

I could go on and on. The A4 49-page manual is excellent, full of examples in Applesoft and machine code. The discs are crammed with useful demos and utilities. I have had the power off for over two months and the card still retained the time and date (according to the manual it should do so for between five and seven months if the on-board battery is fully charged). I have been using the card for some time now as part of an Apple-based real-time controller and have not yet had any problems. To sum up: if you are looking for a clock card for your II+ or //e, don't waste your money on any other card, get a TimeMaster II HO.

Bill Hill

The TimeMaster II HO is available from:

MGA Softcat Ltd.
Pear Tree
Appledore
Kent TN26 2AR
0233-83571
Price: £79.35 inclusive of P&P

```
PROCEDURE Read_clock(VAR date_and_time : STRING);

  (* Reads the TimeMaster II HO clock card for time & date.    *)
  (* Uses function PEEK and procedure POKE, written to perform *)
  (* in same way as their BASIC equivalents.                   *)
    CONST
     SLOT = 7; (* I have put the clock card in this slot *)
    TYPE
     Long = INTEGER[8];
    VAR
     FMT : ARRAY[1..19] OF INTEGER;  PA,PB,CA,CB : Long;
    SHORTPA,SHORTPB,SHORTCA,SHORTCB,D,T,M,I : INTEGER;
     TSTR,DAY : STRING;  S : STRING[1];
    BEGIN
     (* format data - W DD/MM/YY HH:MM:SS format *)
     FMT[1] := 54;  FMT[2] := 160;  FMT[3] := 56;
     FMT[4] := 55;  FMT[5] := 175;  FMT[6] := 58;
     FMT[7] := 57;  FMT[8] := 175;  FMT[9] := 60;
    FMT[10]:= 59;  FMT[11]:= 160;  FMT[12]:= 53;
    FMT[13]:= 52;  FMT[14]:= 186;  FMT[15]:= 51;
    FMT[16]:= 50;  FMT[17]:= 186;  FMT[18]:= 49;
     FMT[19]:= 48;
     (* initialise PIA *)
     PA := 49280 + SLOT * 16; (* $C080 + $N0 *)
     CA := PA + 1;  PB := PA + 2;   CB := PA + 3;
     PA := PA - 65536;  CA := CA - 65536;
     PB := PB - 65536;  CB := CB - 65536;
     SHORTPA := TRUNC( PA );  SHORTCA := TRUNC( CA );
     SHORTPB := TRUNC( PB );  SHORTCB := TRUNC( CB );
     IF PEEK(SHORTCB) = 0
      THEN
       BEGIN
        (* set direction registers *)
       POKE(SHORTCA,0);  POKE(SHORTCB,0);
       POKE(SHORTPA,0);  POKE(SHORTPB,255);
        (* point at data registers *)
       POKE(SHORTCA,4);  POKE(SHORTCB,4);
       END;
     (* read clock *)
     TSTR := '';  S   := ' ';  DAY  := '123';
     FOR I := 1 TO 19 DO
       BEGIN
        POKE(SHORTPB,16);   (* hold clock *)
         D := FMT[I];
         IF D > 127
         THEN
          S[1] := CHR(D)
         ELSE
           BEGIN
            M := 16;
            IF (D = 56) OR (D = 53) THEN M := 4;
            POKE(SHORTPB,D);
           T := PEEK(SHORTPA);  (* read the digit *)
            D := T - (T DIV M) * M + 176;
            S[1] := CHR(D);
             IF I = 1
             THEN
               BEGIN
                 IF D = 176 THEN DAY := 'SUN';
                 IF D = 177 THEN DAY := 'MON';
                 IF D = 178 THEN DAY := 'TUE';
                 IF D = 179 THEN DAY := 'WED';
                 IF D = 180 THEN DAY := 'THU';
                 IF D = 181 THEN DAY := 'FRI';
                 IF D = 182 THEN DAY := 'SAT';
               END;
           END;
         IF I = 1
         THEN
          TSTR := DAY
         ELSE
         INSERT(S,TSTR,LENGTH(TSTR)+1);
       END;
      POKE(SHORTPB,47);   (*release clock *)
  (* make sure string is in proper ASCII so that ORD function  *)
  (* always returns a value < 127 when used elsewhere          *)
      FOR I := 1 TO LENGTH(TSTR) DO
       BEGIN
        D := ORD(TSTR[I]);
        IF D > 127
        THEN
         D := D - 128;  TSTR[I] := CHR(D);
       END;
     date_and_time := TSTR;
   END;
```

Calling all present and future Apple /// fans

Roland Enflo of the Swedish Apple User Group gives us an introduction to the Apple /// and SOS_MAIL

The subject of this little article is the APPLE /// COMPUTER, which I believe is unknown to many readers. I should like to present myself: my name is Roland Enflo and I live in the Swedish town Ostersund, which, geographically speaking, is situated near the very centre of Sweden. Regarding my occupation: I am employed as Senior Operator, responsible for the operation of a major data network in Northern Sweden, including two (Digital) VAX machines.

The year was 1982 when I first was fascinated by the Apple ///. It was then a brand new product from the Apple Corporation. I liked it so much, its architecture, among other things, that I got one immediately and obtained an additional couple of Apple ///'s later. I have now created an environment for Apple // and Apple ///, because Apple // may be software emulated on Apple ///.

The Apple /// operative system is called SOS, which stands for "Sophisticated Operative System". It uses a number of "Device Drivers" for communicating with peripheral units. A "Device Driver" is necessary for every such unit, no matter if it is built in or not.

Figuratively speaking, Apple ///'s peripheral units, e.g. the keyboard, monitor, printers and communication ports are equivalent to human eyes, ears and speech. The "Device Drivers" are the contact medium between the peripheral units and SOS.

During a cold start the operative system is loaded into memory. One of its first tasks is fetching the "Device Drivers" from the disk and load them into memory. Without them, Apple /// can neither receive nor transmit information. The "Device Drivers" are stored in a file called "SOS.DRIVER", and you yourself must decide upon the configuration of the file. Thus you may carry out modifications, as for instance adding a printer or deleting a communication port. However, after you have started executing a program you cannot perform any modification. The "Device Drivers" are stored in RAM memory until you switch your Apple /// off or start another program.

There are not only "Device Drivers" in "SOS.DRIVER". There are also four system parameters, namely:

1. Number of disk drives connected to the Apple ///
2. Apple ///'s set of symbols
3. ASCII code of the keyboard
4. The location of auxiliary boards (four slots)

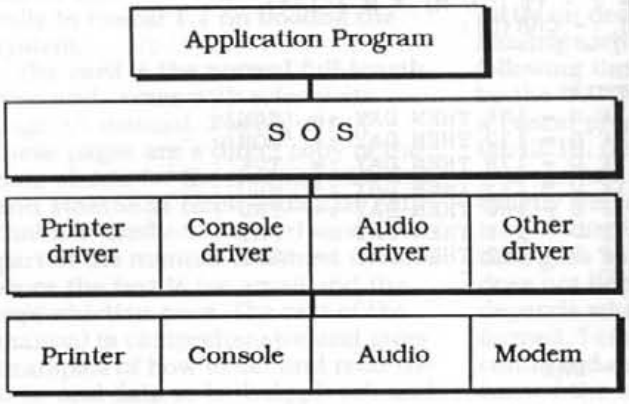
If I should treat every aspect of the Apple /// in this article it would expand far beyond the space alotted to me by the editor. But I might come back some time in the future with an article about how to emulate disks and hardware to simulate an Apple /// on an Apple //.

/Roland

SOS_MAIL

"SOS_MAIL" is the name of a small organisation which I have founded. It has at its disposal two Apple /// computers and they are both almost constantly in service. One Apple /// is used as a BBS with about 250 users at the moment. The other Apple /// is available to all European Apple /// owners when in need of help. However, the main purpose of

The Apple ///



Width:	17.5 inches
Depth:	18.2 Inches
Height:	4.8 Inches
Weight:	11.8 kilogrammes
Processor:	Based on a 6502B microprocessor
Memory:	128k, 256k or 512k
Disk Drive:	5.25 inch drive, 143360 bytes
Monitor:	12 inch with 80 x 24 symbols, 63 Hz
Profile:	5 Mb: 4980736 bytes in 9728 blocks, accesstime 180 milliseconds; 10 Mb and 20 Mb also obtainable

SOS_MAIL is to aquire Apple /// software from the U.S.A. It will also give help and advice about the repair of hard disks, CPU units, etc.

I should like to know if there is an interest among Apple /// users to acquire Public Domain software for their computers in order to build modest program libraries of their own. To get an estimate of the amount of interest there is for the idea, there is a form at the end of this text which I hope those who are positive will fill up and return to me.

Below are listed some Public Domain programs that I think could be useful. They cost a little less than £10 each, depending on the USD rate and also on the number of programs ordered at one time, the price decreasing with the number of items ordered simultaneously.

1. Contemporaneous Log program ///
2. Silent Draw ///
3. Calendar ///
4. Data Windows///
5. Disk Window ///
6. Source Window ///
7. Power Cat ///
8. Vindicator ///
9. Menu & modem utility ///
10. Grabit ///

There are also more recent, non-Public-Domain programs, complete with prices:

1.	Selector ///	$110
2.	Lazarus ///	$60
3.	Desktop ///	$110
4.	Macro Manager ///	$50
5.	Draw on ///	$150
6.	Super Acc /// 1	$45
7.	Super Acc /// 2	$45
8.	TCM ///	$60
9.	Mr Sandman (Game)	$25
10.	Crossword (Game)	$25

This is only a sample from lists of programs obtainable from the U.S.A.

Please feel free to phone or write to me if there are any questions.

Please write your name, adress and phone number on the form so that I can reach you in case I have any questions to ask.

/Roland.

Translated by Paul Mitlid
AUG Sweden

SOS_MAIL Ostersund

Att: Roland Enflo
Brunflovagen 62
831 46 OSTERSUND
Swden

Phone: 01046 63-129641

Yes, I am interested in the following programs for my Apple ///:

_____

_____

_____

_____

_____

AppleWorks on the II+

Johan Wessberg from the Swedish Apple User Group takes a look at a neglected subject

One of the major advantages with owning an Apple // is that you have access to AppleWorks. But this integrated program (three in one), so easy to use, unfortunately has a major drawback: you can't run it on an old Apple II+. Many "plus"-owners are apt to look upon their //e friends with envy, and this I know from experience of my own. Some of the II+ owners may even never have heard about AppleWorks and are still using their old Visicalcs and Apple Writer II's...

Hardware

The truth is that, for several reasons, AppleWorks and II+ don't get on well together. In its basic version, Apple II+ has only 48 kilobytes of memory, although that was quite a lot in the seventies when the computer was designed. The //e has 64 kilobytes, and it is easy to upgrade it to 128 kilobytes for a moderate sum of money. A //c always has 128 kilobytes.

AppleWorks is so large that there isn't room for the entire program even in 128 kilobytes. Only those parts of the program that are used at the moment are fetched from disk and loaded into memory. If a II+ is to be used with AppleWorks it must have at least 64 kilobytes which may be achieved by putting a "language card" with 16 kilobytes of memory in slot 0. Used language cards are cheap and easy to come across. If, by some obscure reason, you still don't have a 16 kilobyte card, NOW is the right time to acquire one!

Furthermore, the II+ has only a 40-character-per-line screen. That is also true for the basic version of the //e, but it can easily and cheaply be upgraded to an 80-character screen. The //c always has an 80-character screen.

It is necessary to buy a 80-character card for the II+ and install it in slot #3. These cards are more complicated than the simple language card (among other things, it has its own microprocessor) and initially they were rather expensive. At present there are several brands of card available on the used-card market. Unfortunately every brand has its own method to produce 80 characters per line. The software necessary to make AppleWorks operate on the II+, is usually very particular about which 80-character card should be used. Several of them won't operate with AppleWorks, although they are all right for Applesoft BASIC, etc.

If you are about to buy an 80-character card, I recommend a Videx or a Videx-compatible card. Several good ones of differerent brands are manufactured in South-East Asia. "Sup'R Term"-cards are also supposed to work well, although I haven't tested them myself. On the other hand, if you have decided to buy a new card, and a real good one, you should get a "Viewmaster 80" from Applied Electronics. It is Videx-compatible, has more functions than any other card and seems to be tailored especially for AppleWorks. Its price is about $130.

Returning to the II+, its character set is less complete than later models. The II+ keyboard is in fact a Teleprinter (Teletype) keyboard which was standard when the Apple II first appeared on the market. This keyboard has only capitals. There is "Backspace" but no "Delete", a serious deficiency because with AppleWorks you may reverse without erasing the letters you pass over; erasing is done with the "Delete" key. Moreover, several other characters are missing on the really ancient Apple II+'s, for instance some Scandinavian letters, a distinct drawback for a Swedish II+ owner. AppleWorks command state is achieved by pressing an "Open-Apple" key which does not exist on the Apple II+.

The lack of an "Open Apple" key is a serious drawback and isn't easy to remedy. Some time in the past new keyboards or decoders were on sale and there are expansion cards that allow small print as well as capitals. These are however hard to come by nowadays. I have built a new decoder for my own use, because I belonged to those who lacked even Swedish characters. The job wasn't very difficult, it took a few weekends to complete, but can be recommended only to those who haven't "burnt" themself irrevocably on the soldering iron: there is a lot of soldering to do.

Most 80-character cards have built-in firmware for small print as well as capitals. Often a thin insulated wire is passed from the bottom of the keyboard to the computer's game contact and thus it will be possible to shift between small print/capitals with the usual shift key ("shift-wire mode"). How this wire should be connected is explained in the card's manual. But then, how often do you find a used card that still has its manual?

Luckily, the problem with the somewhat elderly keyboard may be solved by smart programming, which brings us to...

Software

When you have acquired at least 64k of memory and an 80-character (preferably Videx-compatible) card, you arrive at the next stage. AppleWorks is intended for a //e or a //c with at least 128k. To make AppleWorks get on in the environment of the II+ you must modify the program. This is performed with "patches" which means that you simply delete part of the AppleWorks program and substitute drive routines for the new environment. There are two programs available that manage the operation. One is "PlusWorks", which exists in various editions, fitting successive versions of AppleWorks. As far as I know AppleWorks version 2.0 is the latest with which you can use PlusWorks. (The latest version of AppleWorks is 2.1). I have no personal experience of PlusWorks, but it is well known and should work well. Its price is $50.

The other possible program is "AppleWorks Expander" from Applied Engineering Inc. ("AE"). The program can't be bought separately but comes with AE's various products for the Apple II. You get it, for instance, with "Viewmaster 80", mentioned above, also with "RamFactor", which I will discuss later.

Patching AppleWorks is performed in the following way: you first make a copy from the original AppleWorks disk; never patch the original disk! Then you boot the AE (or PlusWorks) disk, you choose a patch from a menu and follow the

instructions given by the patch program. A number of messages appear on the monitor screen, informing you that you have a II+ with at least 64k of memory, that the 80-character card is compatible (that it is "Videx" or "Sup'R Term" or AE), that the patch is ready to be installed. You then boot the AppleWorks copy you made earlier. It rotates for some time in the drive and then you are ready to begin using AppleWorks on your II+.

What is the result?

It works! It's wonderful to be able to use a real Word Processor with an 80-character screen, to fetch reports directly from a data base, to make calculations rapidly just like any //e-owner. The keyboard problem is solved with "Prefix-keys". You get all AppleWorks commands when you use the AE variety by preceding the command with "Escape". Thus "Open-Apple-P" becomes "Escape-P". For small print/capitals and unusual symbols other prefixes are used. There is a little more key-pushing, but most prefixes seem natural to use after some time.

64 kilobytes of memory, on the other hand, is far from enough for serious use of AppleWorks. With only 64k you get a "desktop" (Applework's special expression for data-available memory) of just a few kilobytes. That is enough for a document of a few pages only, or a data base as large as the list of telephone numbers you should preferably note in your pocket calendar. But there is a solution to the problem.

RamFactor

RamFactor is a memory expansion card for all computers in the Apple II-family, including II+. The card may hold as much as

1 Megabyte of memory in its basic version and be expanded to

4 Megabytes with a "piggyback" card. RamFactor is obtainable in versions from 256k; if you wish you can then supply your own memory IC's to complete to a maximum of 1 Mb.

RamFactor used with AppleWorks gives you a gigantic desktop. There is enough space for several thousand pages, very large data bases, etc. You can have several files simultaneously on the desktop, documents, data bases, spreadsheets, and alternate between them with a few keystrokes: that is the real strength of the AppleWorks. Furthermore, the entire AppleWorks program may be loaded onto the RamFactor card and you are then spared the incessant spinning of your program disk; you get less noise and much faster operation. Also, you can use some of the memory on the card as a "Ramdisk": part of the memory will behave exactly like a very fast disk drive. A word of warning: remember that all information on this Ramdisk disappears when the computer is turned off.

Why all this publicity for RamFactor and AE? The reason is that using the AE products is to-day the only way to expand the memory if you want to use AppleWorks on a II+. There are some old 128k cards that may perhaps be used, but they are of little help to AppleWorks. So: by all means AppleWorks on a II+, but first a RamFactor memory card.

The Fly in the Ointment

Is AppleWorks on a II+ with a RamFactor memory card really equivalent to AppleWorks on a //e?

No, there is one great disadvantage.

Among the many advantages of AppleWorks are the useful and numerous complementary program modules that can be added to it. There are for instance programs that can convert a series of commands to one single keystroke ("macros"). There are also programs for making various diagrams, for making tables, for advanced control of the printer. In to-day's PC-dominated computer world, an expanded version of AppleWorks competes sucessfully with most similar programs.

Unfortunately, these complementary program modules won't work on a II+. I have tried "AutoWorks", "MacroWorks", "UltraMacros" and "Time-Out"-modules whithout success. There is always the same terse message on the screen: "Needs 128k base RAM" or "Needs enhanced Apple //e".

Conclusion

It is possible to make AppleWorks operate on a II+, and doing so is great fun. However, if you want to do serious work you must get a RamFactor memory expansion card. Unfortunately it is impossible to install complementary program modules that are so popular among AppleWorks users.

A 256k RamFactor card costs at least $200 and the cost seems to increase every day: there appears to be no limit to the prize of a memory IC. If you want to use AppleWorks you have this dilemma: should you buy a RamFactor card or a used //e or //c?

A RamFactor card can also be used on a //e (and AppleWorks is short of memory even with 128k) and therefore the answer is simple: first a RamFactor card and then a //e when you can find one at a reasonable prize. That's what I did - and after all you have to teach yourself AppleWorks before you can enjoy those complementary modules...

STOP PRESS!

In the November issue of A+ magazine there is a firm advertising low price alternatives to several expansion cards for Apple //. Among other things there is a "Super Expander +" that is supposed to give up to 1014k of memory for AppleWorks, exactly like RamFactor. The manufacturer's name is "Nexo Distribution". I haven't seen this card mentioned elsewhere, but if it exists (and does function!) it may be a less expensive alternative to RamFactor. The prize is $79 for an empty card, and you have to buy the memory IC:s yourself. You should also observe that you have to buy the Plusworks as well as "AE expander" separately, as these programs only come free with RamFactor.

Johan Wessberg

Editor's comment

❑ Cirtech PlusRam cards may also be used for AppleWorks expansion on the II+ and come with software to allow this. As a matter of fact it isn't absolutely true that old 32k and 128k memory cards can't be used. "PlusWorks", which Johan hasn't had the opportunity to test, may be used with these cards. Johan's meaning about upgrading to //e later still holds true - an old 128k card is nothing like a RamFactor in a //e. On the other hand, an old 128k card is very much cheaper...

Translated by Paul Mitlid
AUG Sweden

Prices:

PlusWorks	£24.95
80 column expander card	£69.95
256k RamFactor	£171.35
256k upgrades	£63.25

All prices are inclusive of VAT and post and packing from:

MGA Softcat
PearTree
Appledore
Kent
TN26 2AR
0233-83571

PlusDisc SC

Dave Ward takes a look at the PlusDisc SC running on the Apple II

Cirtech, who have been supplying high quality memory cards for the Apple // range of computers since 1985 have, at last, entered the Macintosh market with the plusDISK SC. Ewen Wannop reviewed plusDISK SC for the Macintosh range in the last issue of Apple 2000 magazine, February 1989 and showed that it made significant speed improvements when using large applications such as Page Maker. PlusDISK SC is a SCSI device and as such may be connected to any Apple // computer with a suitable SCSI interface.

The plusDISK SC is a very light weight box measuring just 14cm wide by 6cm high by 19cm deep and is supplied in an enormous very well padded box together with a small battery charger in a plug. The plusDISK SC starts at 1 Megabyte and can be expanded in 256K byte increments up to 4 megabytes. To achieve this in such a small box Cirtech have arranged that the chips are supplied in stacks of eight. The 256K byte CMOS chips used by Cirtech require extremely small amounts of power which has allowed Cirtech to use a small rechargeable battery to allow the plusDISK SC to retain it's memory when switched off, for in excess of three months it is claimed. The battery appears to charge very quickly and even after a small charging period in a computer the plusDISK SC can be disconnected and removed from the machine left for weeks and then boots up without a problem. When you use the plusDISK SC you must plug in the charger plug into a mains socket and then place the other plug into the back of the plusDISK SC. When properly connected a little red light glows on the from panel of the plus DISK SC which dims during access to memory in the disk.

The plus DISK SC is clearly aimed at the Macintosh market as can be seen from the manual which hardly ever refers to the Apple // range of computers. Don't worry though setting up the system is generally very easy. To use the plusDISK SC you'll require a SCSI interface card in your Apple // computer. This almost certainly precludes the use of the product with an Apple //c since there is no SCSI interface for that particular computer, as far as I am aware. There are now two possibilities:

1) You already have an SCSI interface card in your computer. If so just plug in your plusDISC SC and if it is the first time of use then use your favourite formatting program to format it. If you already have a hard disk attached read the manual and attach the plusDISK SC as prescribed for a Macintosh.

2) If you don't already own a SCSI interface card then you could use one that Cirtech have recently introduced. See the review for the Cirtech SCSI card elsewhere in this issue of the magazine.

So far we have only managed to check out the plusDISK SC connected to the Apple SCSI and Cirtech SCSI interface cards and both work fine. The Cirtech SCSI card and the plusDISK SC have been tried in most of the Apple // computer range; Apple][plus, Apple //e and the Apple IIgs without any problems. The plusDISK SC is completely transparent in use and just acts like a super fast hard disk with the same integrity of memory when the unit is disconnected. In fact this review was partially written on three different machines the only common factor being the plusDISK SC.

When plusDISK SC is ProDOS formatted you can make partitions on it just like any other hard disk using the HD Mate utility marketed by Cirtech. Better still if you are using a Cirtech SCSI interface card the partitioning software is supplied free-of-charge with it. Further information regarding this partitioning software is included in the Cirtech SCSI review elsewhere in this issue of the magazine.

BACKING-UP the data on any disk is very important particularly if it is data. You can back-up plusDISK SC by the simple expedient of copying individual files to another medium such as 3.5" diskettes. Another way, if appropriate, is to copy the whole disk using a backup program such as the one available with the ProSel utilities. Backing up of a megabyte takes just a little over a minute and can be quicker that copying only a few individual files! The plusDISK SC we were loaned was given some rough treatment but we suffered no loss of data. None-the-less we kept a couple of back-ups.

Timings: Launching AppleWorks GS (all six modules) from ProSel-16. AppleWorks GS (a 753K file) is launched through GSOS with memory cache of 32K bytes.

plusRAM-16 card	123 secs
plusDISK SC	125 secs
3.5" disk with 32K cache	303 secs
(242% increase)	

Why does AppleWorks GS take so long to load? Probably due to the fact that small segments are loaded and moved about in memory. If an Apple IIgs with a faster processor appears these differences may well make the plusDISK relatively faster.

Although the plusDISK is rightly aimed at the Macintosh market there is a place for it in the Apple // world. For instance to be able to switch on your Apple //e and be in the AppleWorks main menu in 2 seconds is attractive, of course, a plusDISK card would be less expensive and do the same job but, would, in it's 1 megabyte incarnation almost always take up one slot and hide or baulk another. The Apple IIgs is, however, where the plusDISK SC may well come into its own because just like the Macintosh applications Apple IIgs applications are becoming ever larger with the associated long loading times. Already the AppleWorks GS program is almost 800K bytes in size and takes a few minutes to load from a 3.5" diskette.

Dave Ward

PlusDISK SC is available from:
Cirtech (UK) Ltd.
Bidmuthin Technologies Ltd
Holdens Computer Services
MGA SoftCat and others.

Basic Prices:

plusDISK SC 1 megabyte	£348
plusDISK SC 2 megabytes	£579
plusDISK SC 3 megabytes	£849
plusDISK SC 4 megabytes	£1019
256K byte extensions	£64

SCSI INTERFACE CARD

The Cirtech SCSI Interface is a standard slot card for the Apple IIGS, //e or 64K II, which lets you use an SCSI hard disk with ProDOS, DOS 3.3, Pascal and CP/M based programs.

- *Extends ProDos 8 to let you use up to two hard disks of 128 Megabytes each!*
- *Partitioning of your hard disks for up to four different operating systems is easy with the unique software support*
- *NETWORKING – The SCSI Interface can also be used in conjunction with the Cirtech Multi-User Network System software which allows several computers to simultaneously share and partition SCSI hard disks.*

The leading SCSI Interface at only £54.00

CHAMPION PLUS INTERFACE CARDS

Champion Plus cards are the most versatile Interface cards available for the Apple II, //e or IIGS, combining serial (RS232) and parallel (Centronics) Interfaces, together with 100% Apple Super Serial Card & Parallel Printer Card compatibility.

- *Champion Plus Dual (SSC/Champion)*
  Serial and/or parallel output, providing all the features of Super Serial Card mode and Champion Card mode. £78.00
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- *Champion Plus Serial (SSC/Champion)*
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PLUSDISK SC

PlusDisk SC is a brand new concept in storage media. Use it just like a normal disk drive *BUT* a drive with the outright speed of a RAMdisk combined with the safe storage of a hard disk – in fact, the very best of both worlds!

With no mechanical or moving parts, PlusDisk SC gives electronic performance, in total silence!

PlusDisk SC uses special low-power memory which is easily user expandable. It comes complete with its own power source and cable to connect directly onto the back of your Mac Plus, SE or II; or, via a Cirtech SCSI Interface Card, to your Apple IIGS, //e or II.

The new generation in storage technology from only £348.00

PlusDISK

PlusDisk is the only plug-in card for your Apple II, //e or IIGS which operates with the lightning speed of a RAMcard AND keeps its contents safe for months, even when there's no power to your Apple!

Using special, low-power memory, PlusDISK safely stores any standard Apple operating system or program (ProDOS, Pascal, CP/M or DOS3.3) ready for *instant start-up* whenever you switch on your Apple. The partitioning software supplied also lets you divide your PlusDISK to create separate areas for different operating systems.

PlusDisk is easily expandable right up to One Megabyte. The back-up power source is contained on the card – there are no bulky external power supplies or batteries!

Ultimate speed from only £128.00

PlusRAM-16

plusRAM-16 is a standard slot RAMcard for your Apple II, //e or IIGS which instantly gives you one extra Megabyte of memory and can easily be user expanded to FOUR and, ultimately, SIXTEEN Megabytes!

- *Supported by more software than any other RAMcard – ProDOS, CP/M, Pascal and DOS 3.3*
- *Programs operate at electronic speeds!*
- *Desktop expansion and a whole range of enhancements for AppleWorks*
- *Supplied with unique RamDesk Manager software to divide the huge memory into separate disks and change instantly between them.*

The best value standard slot RAMcard
ONE MEGABYTE for only £229.00

PlusRAM-GS8 . . .

the special RAMcard for the Apple IIGS memory expansion slot and the only single card to expand from ONE up to EIGHT Megabytes. Use the superfast extra memory as a RAMdisk or directly (or both)! plusRAM-GS8 is fully compatible with all IIGS software like AppleWorks, and ProDOS, DOS3.3, CP/M and Pascal 1.3 programs.

Add a PROMDisk or ROMDisk Adaptor to your plusRAM-GS8 to give up to 256K battery backed-up static RAM or 512K ROM. This lets you boot your favourite program *instantly* from the Adaptor as soon as your GS is switched on!

plusRAM-GS8 – 1 Megabyte for only £249.00

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Access VISA

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Selkirkshire, TD1 2BP, Scotland Telephone: (0896) 57790
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AAH555 (Source)

Macro You.Accuse

Peter Davis gives us two useful macros to use with UltraMacros and AppleWorks 2.0 or 2.1

sa-R Remove without pain
sa-ctrl-B Control all Arrow Keys in Both directions

The Accusatory "You"

This is a macro pair which you may find useful for removing files without being hassled by AppleWorks warning messages. Macro-R starts the process then passes control to Macro-ctrl-B. Macro-ctrl-B handles the arrow Keys in as many way as you want until you press escape to abort, or return to exit and pass control back to the calling macro-R. The advantage of this macro is that you can see what you are doing and even abort at the selection stage.

My reason for presenting it is that it solves the problem of reading the main menu screen using token <screen,C,R,L>.

In normal UltraMacros:-
Column C can be 1 thru 80
Row R can be 1 thru 24
Length of string can be 1 thru 80.

Unfortunately <screen> does not work on the main menu using the normal parameters above, still less on main menu in superimposed card index form. Luckily I stumbled on the fact that the "You" which comes up when try to Remove changed files (or Save files for that matter) can be read at <screen,15,139,3>. In other words this macro is driven by the AppleWorks marking arrows (return alone for a single file), and continues till what I call the accusatory "You" stops reappearing. (The macro listing is shown in the table opposite)

This means that for Main Menus R can range from 128 thru 152, and C can range from 1 thru 80. Even then things are not that simple, the trick is that every time you cross a demarcation line of a superimposed menu it adds 1 to the value of R and 0 to the value of C. As so many of Beagles manuals tell you, experiment. You can use the same technique for saving files.

Peter Davis

```
Definition of accusatory "You":
You created this file
You made changes to this file
etc
start
-------
Macro R removes  changed or unchanged files
-------
Files indicated userinput, and removed without harassment from AppleWorks.
Variables Screen String $1 and Numeric Z ASCII value of key.

R:<all oa-q esc >4<          { Go to main menu,  select 4 Remove files }
 rtn bell       { Confirm Return, Bell pay attention this is permanent }
 msg 'use arrow to indicate file to remove without saving ' :
 sa-ctrl-B { Jump macro-ctrl-B & handle arrow keys in "Both" directions }
 rtn  { return needed to remove unchanged files or process arrowed files }
  begin { Repeat process starts here and deal with changed or new files }
  R =  139   { get first row on Remove Files Menu  which contains "You"}
  C =  15   { get first column on Remove Files Menu which contains "You"}
  $1 = screen C, R, 3     { on the screen col C row R read 3 characters }
  if $1 = "You"   { if macro senses "You" (made or created) on screen   }
  then >3< rtn   { 3 Throw out the changes to the file & confirm Return }
   >Y<                                                  { Y for Yes }
   rpt                  { repeat cycle in search of "You" begins here }
 elseoff    { returns macro to being unconditional with respect to "You }
 ifnot $1 = "You" then esc          { if "You" no longer there then stop  }
 stop>!

---------------
Macro sa-ctrl-B Control "Both" Arrow Key  directions. Called by  sa-R
---------------
<ctrl-B>:<all { defined by ASCII value the meaning of arrow keys changed }

  begin    { Repeat starts here, escape aborts, return exits }
     Z = key              { pauses macro for single key input }
     if Z=11 then up rpt else                { up arrow is up }
     if Z=10 then down rpt else               {  down is down  }
     if Z= 8 then left rpt else               { left is  left  }
     if Z=21 then right rpt else              { right is right }
    if Z=27 then  esc esc    {escape takes you out of options}
     :msg ' Macro Aborted ! ' : wait 1000 : msg "": { null clears msg }
      stop else                  { escape also tells you macro aborted }
                                 {  if you do not press return repeat  }
    ifnot Z=13 then rpt    { if you pressed return then exit }
 elseoff>! {  macro unconditional, control passed to calling macro  }

END      { Terminates compilation }
```

Using Format-80

Len Watson shows how to gain direct access to a disk - An example using Format-80

Three years ago I bought a copy of Format-80 (version 1.32), a British word processor for the Apple][e. One of its useful features is the Mailing List, which allows a fairly sophisticated mail-merge facility — sufficiently sophisticated for me to try to use it as a simple database. I found however that although Format-80 has many ways of sorting and selecting data, it is limited in its printing output facilities. This led to my delving into some of the mysteries of the Apple DOS's RWTS routine, in order to get direct access to the sectors of the data disk: the general results of that enquiry were written up in an earlier issue of Apple 2000 (Watson, 1988). In this present paper I show how these general ideas can be used to allow the direct reading of a Format-80 data disk: and in the course of doing so, illustrate the application of the technique which has potential for many other uses.

To understand the problem I faced, some features of Format-80 need to be understood. Although disk initialisation follows the DOS 3.3 format, no DOS image is put on the disk. There is no VTOC, no file directory, and therefore no way for the computer to access files using normal DOS procedures. Track 0 of the disk contains housekeeping information. The actual data is allocated commencing at Track 1 Sector 0, to a total of 510 records. Each record occupies precisely one disk sector.

Data is output via the word-processor in a typical mail-merge way: that is, labels (which have to be unique, and therefore typically are preceded by e.g. a dollar sign) are placed in the text to be printed. When the word-processor is run, the data for the field replaces the label, continuing through the full list. For example, if the labels to be used are $Name, $Title and $Address, then the following, typed on the word-processor, would when operated via the Mailing List routine, give an address label for each person in the file:

```
$Title  $Name
$Address
```

Boolean logic and other methods allow a fairly sophisticated selection to be made of which labels are to be printed.

Unfortunately from the point of view of someone wanting to use Mailing List data for other purposes, while selection of material to be printed is sophisticated, the placing of material on the page is not. For example, returning to the label example above, if two records are as follows:

Field Label	Record 1	Record 2
$Name	Watts	Anderson-Forbes
$Title	Mr A.	Mrs Kathleen

then the first lines of the respective labels would read:

```
Mr A Watts
Mrs Kathleen Anderson-Forbes
```

If these were to be put into columns, then the following format:

```
$Name                $Title
```

would lead to this output:

```
Watts                Mr A
Anderson-Forbes      Mrs Kathleen
```

While the authors of Format-80 suggest a way around this, it is not very convenient.

Similarly, it is not possible to have a report with a title and other headings, for, following normal mail-merge customs, the heading is replicated for each record.

On the other hand, the strengths of the Format-80 mailing list facility were too good to lose: what I wanted was to be able to use the Format-80 program to input and sort data on the data disk, and yet to be able to retrieve it independently of the word-processor, and to manipulate it using normal Applesoft. For example, I wanted to be able to print out only those labels I hand-selected, making me independent of the predetermined categories assumed by the Format-80 program. I also wanted to be able to be able to produce a Telephone List where each entry would be of the form:

```
Surname, Title and First Name
                ..... Tel. Number
```

where the surnames would be listed in alphabetical order, and the whole right-justified and formatted with a title header, and with skips over page breaks. This is not possible using Format-80 alone.

The first problem which arises is that, although the formatting of the data disks follows many of the protocols of DOS 3.3 (Format-80 is also available in ProDOS), as noted above it is impossible to access the file using the normal DOS methods, as there is no Directory track on the data disk.

A general method for avoiding this problem is outlined in Watson (1988).

The Mailing List data disk uses Track 0 for housekeeping. Specifically, Sectors 6 and 7 contain a list of tracks in sorted order. The second sector has a $FF at the position $FE, and at position $FF has an identifier of the label last sorted on. If this is 00 then no sort has taken place. Track 0 Sectors 8 and 9 similarly contain a list of the sectors corresponding to the sorted tracks. Again, position $FE contains a $FF. The data in these sectors provide a vital key, not to accessing the data sectors (which can be done directly) but for using the sorting power of the Format-80 program to our benefit. The data itself is recorded in standard ASCII. Each field is terminated by a $20: and each space remaining after the end of data is occupied by a $20.

Accompanying this article are two programs. One of these (TELEPHONE LIST) is in Applesoft Basic: the other (LOADMOVE) is in Assembler. LOADMOVE illustrates how to use machine language to access the disk; how to move data around the computer memory; and how to format it in order that it can be used by a Basic program. TELEPHONE LIST simply shows how the Assembler program can be incorporated into a Basic program, through an example of making a simple telephone list.

It is assumed that on the Mailing List data disk the first three fields are labelled $Name; $Title; and

$Telephone Number.

And now for some explanation of the programs.

LOADMOVE has been assembled (using the Big Mac assembler from A.P.P.L.E.) at $93C0, which lies between Himem: and the buffers used by TELEPHONE LIST. First come five lines initialising the Ampersand vector. These load into memory locations $3F5 to $3F7 an instruction to JMP C0 93 (in Basic the same effect is achieved by Poke 1013,76; Poke 1014, 192; Poke 1015,147): so when an & is used in the Basic program, the program will branch to $3F5, read the instruction located there, and so jump to $93C0.

The next part of the program then checks for the letter which follows the &: if it is an M, the program branches to the MOVE subroutine: if it is an R it goes to the STRING section. The functions of these are explained below. I am very much a beginner at programming in Assembler, and I am sure that more elegant code can be written to achieve what I have suggested.

The first line of TELEPHONE LIST sets Himem: at $9100 (37120 decimal). DOS uses buffers into which it moves data prior to writing it on to disk, or after reading it from disk. Three such buffers are automatically set aside at Bootup, starting at $9600. This setting of Himem: allows a buffer of 52 sectors between the DOS buffers and Himem:. These are used for the program LOADMOVE, and for the various buffers used by TELEPHONE LIST.

The DOS RWTS routine, when used in the way we are going to use it, normally loads the disk Directory into a special buffer at $B4BB. LOADMOVE instead persuades the RWTS to load other sectors of our choosing: in this case, Track 0 Sectors 5 to 8 of the Data disk (initialised in line 2010). The Call in line 2070 activates the RWTS routine itself, using the information already given to it, reading the sector specified and loading it at $B4BB. From there, however, it must be moved to a more permanent location, as it will be overwritten the next time a sector is called. The &M in line 2090 does this.

What it does is to move that which is in $B4BB and the following 255 bytes to one of the buffers whose space has been reserved above Himem. The syntax is: &M,S,B,L where S=Start of the location from whence the code is to be moved, in this case always $B4BB (46267 decimal); B is the start of the buffer to which the code is to be moved, defined by the array

Loadmove Listing - Using Big Mac or Merlin Assembler

```
                        1  * LOADMOVE
                        2  *
                        3  ****************************************
                        4  * Program to load data generated       *
                        5  * by the FORMAT.80 MAILING LIST        *
                        6  * program, to allow manipulation       *
                        7  * using normal Applesoft programs      *
                        8  ****************************************
                        9  *
                       10  SOURCE   EQU  $3C
                       11  TARGET   EQU  $42
                       12  LINNUM   EQU  $50
                       13  FRESPC   EQU  $71
                       14  VARPNT   EQU  $83
                       15  CHRGET   EQU  $B1
                       16  AMPERV   EQU  $03F5
                       17  FRMNUM   EQU  $DD67
                       18  CHKCOM   EQU  $DEBE
                       19  SYNTAX   EQU  $DEC9
                       20  PTRGET   EQU  $DFE3
                       21  GETSPA   EQU  $E452
                       22  MOVSTR   EQU  $E5E2
                       23  GETADR   EQU  $E752
                       24  *
                       25           ORG  $9100
                       26  *
9100: A9 4C            27           LDA  #$4C     ;   Set Ampersand Vector
9102: 8D F5 03         28           STA  AMPERV
9105: A9 10            29           LDA  #<CHECK1
9107: 8D F6 03         30           STA  AMPERV+1
910A: A9 91            31           LDA  #>CHECK1
910C: 8D F7 03         32           SYA  AMPERV+2
910F: 60               33           RTS
9110: C9 4D            34  CHECK1   CMP  #'M'     ; Check if Move required
9112: D0 04            35           BNE  CHECK2
9114: 20 20 91         36           JSR  MOVE
9117: 60               37           RTS
9118: C9 52            38  CHECK2   CMP  #'R'     ; Check if to create string
911A: D0 4E            39           BNE  OOPS
911C: 20 6D 91         40           JSR  STRING
911F: 60               41           RTS
9120: 20 B1 00         42  MOVE     JSR  CHRGET   ; Move routine
9123: 20 BE DE         43           JSR  CHKCOM
9126: 20 67 DD         44           JSR  FRMNUM
9129: 20 52 E7         45           JSR  GETADR
912C: 84 3C            46           STY  SOURCE
912E: 85 3D            47           STA  SOURCE+1
9130: 20 BE DE         48           JSR  CHKCOM
9133: 20 67 DD         49           JSR  FRMNUM
9136: 20 52 E7         50           JSR  GETADR
9139: 84 42            51           STY  TARGET
913B: 85 43            52           STA  TARGET+1
913D: 20 BE DE         53           JSR  CHKCOM
9140: 20 67 DD         54           JSR  FRMNUM
9143: 20 52 E7         55           JSR  GETADR
9146: AA               56           TAX
9147: 30 21            57           BMI       OOPS
9149: A0 00            58           LDY  #0
914B: C6 50            59  MVE0     DEC  LINNUM
914D: A5 50            60           LDA  LINNUM
914F: C9 FF            61           CMP  #$FF
9151: D0 04            62           BNE  MVE1
9153: C6 51            63           DEC  LINNUM+1
9155: 30 12            64           BMI  MVE3
9157: B1 3C            65  MVE1     LDA  (SOURCE),Y
9159: 91 42            66           STA  (TARGET),Y
915B: E6 3C            67           INC  SOURCE
915D: D0 02            68           BNE  MVE2
915F: E6 3D            69           INC  SOURCE+1
9161: E6 42            70  MVE2     INC  TARGET
9163: D0 E6            71           BNE  MVE0
9165: E6 43            72           INC  TARGET+1
9167: D0 E2            73           BNE  MVE0
9169: 60               74  MVE3     RTS
916A: 4C C9 DE         75  OOPS     JMP  SYNTAX   ; Gives syntax error
916D: 20 B1 00         76  STRING   JSR  CHRGET   ; Contents of $B4BB into
string
9170: C9 CF            77           CMP  #207
9172: D0 F9            78           BNE  STRING
```

Start( ) initialised previously; L is the length of the section to be moved, always 256 bytes. So once this subroutine is completed, there should be loaded into the four buffers an image of the four sectors on the Format-80 data disk. You can check this by going into the monitor (Call -151) and then typing, in order for each buffer, $9600L, $9700L, $9400L and $9500L.

Lines 1000-1150 then read the first track and sector identified on the index to tracks and sectors on the data disk (i.e., the material just read from disk). The values of TK and SC are then used (via CALL USERWTS) to load the appropriate sector into $B4BB.

However, now there is a problem. We've got a binary image into the computer's memory: but now do we access it for manipulating with Applesoft? The solution is provided by Parker (1983). The Ampersand &R leads to code in LOADMOVE which puts the first byte of the buffer into string B1$ and the rest (255 bytes) into B2$.

After some checking, the program then does a Gosub 200, where normal Applesoft string routines are used to split B2$ into fields (throughout this program it is assumed that the first field will contain at least two characters). These go into the array A1$().

Then on to the subroutine at line 100 in which the elements of the array A1$() are formatted into the telephone list format, and printed. The program returns to line 1000, and repeats the whole procedure for the next sector identified in the index to the sectors held in the buffer space above $9600. Clearly, using the machine code program given here which allows the user to move sectors around the Apple memory, and to convert binary images into strings, it is possible to output these strings in all manner of ways using Basic. In order to help you customize this technique, however, it will e useful to return to lines 6000-6200 of TELEPHONE LIST for an explanation of some of the initialisations given there.

Irrespective of the application you are making ,certain values should not be changed: those for USERWTS, TRACK, SECTR, SLOT, DRIVE, RWCODE, REGP, KEYBD, CLRKEYBD. The others may vary.

RW% specifies whether the Apple is to read from disk [1] or write to it [2]. Clearly it is very dangerous for it to do anything but read (i.e., code 1). I suggest that for those wanting to use these routines in connection with Format-80 Mailing List, all writing routines are done through Format-80. I have therefore defined

Loadmove Listing - Continued

```
9174:  20  B1  00   79            JSR  CHRGET
9177:  20  E3  DF   80            JSR  PTRGET
917A:  A9  01       81            LDA  #1
917C:  20  52  E4   82            JSR  GETSPA
917F:  A0  00       83            LDY  #0
9181:  91  83       84            STA  (VARPNT),Y
9183:  C8           85            INY
9184:  A5  71       86            LDA  FRESPC
9186:  91  83       87            STA  (VARPNT),Y
9188:  C8           88            INY
9189:  A5  72       89            LDA  FRESPC+1
918B:  91  83       90            STA  (VARPNT),Y
918D:  A0  B4       91            LDY  #$B4
918F:  A2  BB       92            LDX  #$BB
9191:  A9  01       93            LDA  #1
9193:  20  E2  E5   94            JSR  MOVSTR
9196:  20  BE  DE   95            JSR  CHKCOM
9199:  20  E3  DF   96            JSR  PTRGET
919C:  A9  FF       97            LDA  #255
919E:  20  52  E4   98            JSR  GETSPA
91A1:  A0  00       99            LDY  #0
91A3:  91  83      100 STA        (VARPNT),Y
91A5:  C8          101 INY
91A6:  A5  71      102 LDA        FRESPC
91A8:  91  83      103 STA        (VARPNT),Y
91AA:  C8          104 INY
91AB:  A5  72      105 LDA        FRESPC+1
91AD:  91  83      106 STA        (VARPNT),Y
91AF:  A0  B4      107 LDY        #$B4
91B1:  A2  BC      108 LDX        #$BC
91B3:  AD  55  02  109 LDA        $255
01B6:  4C  E2  E5  110 JMP        MOVSTR

-End assembly-
185 bytes
Errors: 0
```

Telephone List - Listing

```
1     REM: TELEPHONE LIST
10    HIMEM: 37120: REM $9100
20    GOTO 5000
100   IF A$(3) = "" THEN 160
105   C$ = BA$ + A$(1) + ", " + A$(2)
110   FOR K = LEN(C$) TO (60-(LEN(A$(3)))): C$=C$ + ".": NEXT
120   C$ = C$ + A$(3)
130   PRINT D$"PR#1"
140   HTAB 10:: PRINT C$
150   PRINT D$"PR#0"
155   C2 = C2 + 1: IF C2 = 50 THEN C2 = 0: PRINT D$"PR#1":
      FOR L = 1 TO 16: PRINT: NEXT: PRINT D$"PR#0": HOME:
      VTAB 10: PRINT "To continue printing hit any key.": GET Y$
160   C$ = "" : A$(1) = "": A$(2) = "": A$(3) = ""
170   RETURN
200   B = 1: L = 0: K = 0
220   L = L + 1
230   K = K + 1
240   A1$ = MID$(B2$,K,1): IF A1$ = CHR$(13) THEN 260
250   A$(L) = A$(L) + A1$
260   REM
265   B = B + LEN(A$(L))
270   IF L = 3 THEN GOSUB 100: RETURN
280   GOTO 220
1000  PRINT D$: PRINT D$"PR#1": HTAB 10: PRINT T1$: HTAB 10: PRINT
1007  C% = -1
1008  C2 = 5
1010  C% = C% + 1
1020  TK = PEEK (BT + C%)
1030  SC = PEEK (BS + C%)
1035  IF TK = 0 THEN 1010
1037  IF TK = 255 THEN 5090
1040  POKE TRACK,TK: POKE SECTR,SC
1050  CALL USERWTS
1060  POKE REGP,0
1070  IF PEEK(46267) = 0 THEN 5090
1080  & R > B1$,B2$
1090  C3 = 0
1100  FOR DOUNTIL = START TO FINISH
```

RW% as a constant 1 throughout.

BTRACK, BSECTR and the START( ) array may be redefined. START gives the first location of each of the four buffers into which Trace 0 Sectors 6 to 9 of the data disk will be written. BTRACK and BSECTR replicate two of these for simplicity of coding, and refer to the beginning of the two blocks each of two sectors which are used respectively by the index to the Track and Sector.

SLOT and DRIVE specify the pointers used to change the current slot and drive. I have configured this program for the use of two disks, with the program disk in Drive 1 and the Mailing List data disk in Drive 2: and have poked DR accordingly when swopping of active drives has been called for. Those with only one disk drive can remove references to Drive entirely: but will have to include code to ensure that the user is instructed to swop disks as needed.

This implementation of the technique is trivial, but serves to show how it can be used. Obviously, the procedures (suitably modified) can be used for accessing disks other than those of Format-80.

TELEPHONE LIST has been written to be clear to follow: it could be shortened and simplified considerably (and therefore speeded up) for serious use.

Leonard E Watson

Telephone Listing - Continued

```
1110  C3= C3 + 1
1140  GOSUB 200
1150  GOTO 1010
2000  POKE
2010  TK = 0: SC = 5
2020  POKE DR,2
2030  POKE RWCODE,RW%
2040  FOR K=1 TO 4
2050  SC = SC + 1
2060  POKE TRACK,TK: POKE SECTR,SC
2070  CALL USERWTS
2080  POKE REGP,0
2090  & M,46267,ST(K),256
2100  NEXT
2110  RETURN
5000  GOSUB 6000
5020  GOSUB 6400
5030  HOME
5040  GOSUB 2000
5060  GOSUB 1000
5090  PRINT D$: PRINT D$"PR#1": PRINT: PRINT: HTAB 10:
      PRINT T1$: PRINT D$"PR#0"
5100  HOME: VTAB 10: HTAB 1: PRINT "The end of the data sectors
      has been    reached.": PRINT: PRINT "To re-run the program,
type 'RUN'.": END
6000  TEXT: HOME
6005  VTAB 5: HTAB 9: PRINT "**************
        TELEPHONE LIST                                **********
      ****"
6007  VTAB 13: HTAB 9: INPUT "What date? ";T3$
6008  VTAB 13: PRINT SPC(40)
6010  VTAB 13: HTAB 9: PRINT "<< PROGRAM LOADING >>"
6015  D$ = CHR$(4)
6020  USERWTS = 45111
6030  TRACK = 45975
6040  SECTR = 45976
6050  RW% = 1
6060  SLOT = 46583: DRIVE = 46584
6070  RWCODE = 45121
6080  REGP = 72
6090  NF = 3
6100  BTRACK = 38400: REM $9600
6110  BSECTR = 37888: REM $9400
6120  START(1) = 38400: REM $9600
6130  START(2) = 38656: REM $9700
6140  START(3) = 37888: REM $9400
6150  START(4) = 38144: REM $9500
6160  DRIVE = 46584
6170  KEYBD = 49152: CLRKEYBD = 49168
6175  FOR K = 1 TO 61: T1$ = T1$ + "=": NEXT
6180  T2$ = "FIND RECORD BY NAME"
6190  POKE DR,1
6192  PRINT D$"BRUN LOADMOVE"
6200  RETURN
6400  VTAB 10: PRINT "Please check that:"
6410  VTAB 12: PRINT " - the main program disk is in Drive 1
      - the data (FORMAT-80) disk in Drive 2"
6420  VTAB 15: HTAB 1: PRINT "  CONFIRM? (Y/N) ";: GET Y$: IF
      Y$ = "y" THEN Y$ = "Y"
6430  IF Y$ = "Y" THEN 6450
6440  GOTO 6420
6450  RETURN
```

References

Little, Gary B (1985), *Inside the Apple IIe*. Brady Communications Co.

"The RWTS Subroutine" (1981), Apple][DOS Manual, pp.94-98.

Parker, Bill (1983), "Machine power: a simplified approach to RWTS", *Call-A.P.P.L.E. in Depth*, No.3, pp.127-131.

Watson, Leonard E (1988), "Using the RWTS to bypass the VTOL: a simplified approach to disk access", *Apple 2000* December 88 pp.30-31.

PlusRam 16

Dave Ward explores a wealth of memory

When Apple Computer Inc. introduced its new memory card back in 1985 there was much controversy regarding the manner in which the memory was accessed through a single byte window. Many experts felt that this system was and would be inferior to the older bank-switch memory cards. Soon, however, many third-party companies began to produce their own versions of the memory card. Cirtech were one of the first to produce a full one megabyte innovative card they called the Flipper. We reviewed the Flipper in Apple 2000 magazine February 1987 pp41.

In the intervening 4 years these cards have become very popular, indeed. Cirtech replaced the Flipper with plusRAM cards which we reviewed in Apple 2000 magazine. The plusRAM card was supplied with 256K bit chips populated to 256K bytes and could be extended up to 1 megabyte in increments of 256K bytes. The plusRAM extra card replaced the Flipper. Currently the plusRAM range of cards consists of the plusRAM-1 and plusRAM-16. The plusRAM-1 card uses 256K bit chips and ranges from 256K bytes up to 1 megabyte in increments of 256K bytes. The plusRAM-16 can use 1 megabit chips or 4 megabit chips when they become available. The card Cirtech have been loaned to us for this review is a one megabyte plusRAM card. This card can be extended up to 4 megabytes in increments of 1 megabyte. When the 4 megabit chips arrive in quantity the card can be populated with chips starting at 4 megabytes and on up to 16 megabytes in increments of 4 megabytes. The innovative idea that Cirtech introduced with the Flipper was the RAM Desk Manager that allowed the card to be partitioned into up to 4 independent areas in any of the four operating systems; ProDOS, CP/M, Pascal and DOS 3.3/DOS 3.2. This feature in an improved form was also made available with the plusRAM extra card when it appeared and is currently available for all plusRAM cards with at least 1 megabyte of memory on board. We will be examining the RAM Desk Manager in more detail later.

The Card

The plusRAM card arrives in a padded yellow box with a clear comprehensive User's manual and a single 5.25" diskette of support software to modify AppleWorks & allows Dos3.2, Dos3.3, Pascal 1.1,Pascal 1.2, CP/M 2.20B & CP/M 2.23 to use the plusRAM card's extra memory. The manual gives comprehensive details on the installation of the plusRAM cards, how to add more memory chips and troubleshooting problems. The installation is relatively simple and Cirtech suggest that you may place the card in any of slots 1-7 on an Apple][Plus , Apple //e or Apple IIGS, however there are some exceptions which should be noted:

1) Slot 3 cannot be used in a European Apple //e if an 80 column card is installed in the auxiliary slot 3. You are also advised not to use slot 3 in an Apple IIGS. This is because if slot 3 is set to 'your card' the 80 column firmware cannot be found and any program crashes!

2) If you have an enhanced Apple //e it is advised that you place the plusRAM-16 card in slot 7 as it can be auto-booted from there.

3) If you are going to use Pascal 1.3 you should place the plusRAM-16 card in slots 4,5 or 6 so that Pascal 1.3 will recognise it as a Ram disk.

4) In an Apple IIGS you may place the plusRAM-16 card in 1-7 except slot 3. For slots other than slot 7 you must enter the 'control panel' to recognise your card. You can also arrange to boot from any slot in an Apple IIGS.

5) Slot 0 on an Apple][plus cannot be used because that particular slot is designed only for the 16K bank switched card.

Once the plusRAM-16 is installed it is suggested that you may like to try out the self-test program on the card. This can be done at any time providing that the machine is in basic] prompt or monitor * prompt. The self-test erases all data from the plusRAM-16 card, though. The table below shows what you enter depending upon the slot plusRAM is in :-

SLOT	BASIC	MONITOR
1	CALL 49418	C10AG
2	CALL 49674	C20AG
3	CALL 49930	C30AG
4	CALL 50186	C40AG
5	CALL 50442	C50AG
6	CALL 50698	C60AG
7	CALL 50954	C70AG

Simply press return after the entry and the test will take approximately 1 minute per megabyte of memory on the card and the test will cycle until you stop it.

Adding more memory

Two pages of the manual are devoted to expanding the plusRAM cards. Suitable types of 256K bit and 1 megabit are shown and these chips are also available directly from Cirtech in 256K byte and 1 megabyte increments as appropriate.

Using plusRAM cards with AppleWorks

A very large number of users purchase plusRAM cards to increase the AppleWorks desktop and this is reflected in the support software that Cirtech supply with the card.

The plusRAM cards are recognised by later versions of AppleWorks and used to extend the desktop from the meagre 56K bytes offered by the standard 128K Apple // computer system.One of the really nice features of the support software supplied is that you can patch your AppleWorks version 1.3 so that the program will work on an Apple][plus with 16K card in slot 0 and a suitable 80 column card such as the Videx. With many Apple][plus computers coming onto the second-hand market this may be one way in which purchasers of these machines can put the machine to good use. When you attempt to enhance AppleWorks you should only use a copy. For an Apple][plus only AppleWorks version 1.3 USA can be enhanced to recognise the plusRAM card since later versions of AppleWorks use the alternate 64K which is unavailable on this machine. The manual lists the alternative keys you will

require to use to simulate the special keys AppleWorks uses on the Apple //e. A shift key is essential and for those without one the manual clearly describes the mechanics of installing one.

It is necessary to carry out the enhancement procedure even if you are using an Apple //e or Apple IIGS with AppleWorks versions 1.3 or 2.0. Cirtech claim that this is necessary as the code in the AppleWorks interface to memory card is imperfect. Cirtech's enhancement program makes this interface nearer perfect! Full enhancement is essential if you are using plusRAM on an Apple IIGS and is a very good idea anyway because of all the extra goodies Cirtech have added.

1) If the file you are about to save is too large to fit onto a single floppy diskette the autosegmenting feature prompts you to put in extra diskettes as they are needed. Note that you should have plenty of diskettes all with the same name to store the data. Also mark the diskettes so that you can later reload them in the same order.

2) A very neat RAMcalc Resident Calculator pops up when you press closed-apple-C keys together. You can move the RAMcalc Resident Calculator all over the screen using the arrow keys! RAMcalc has many features that other pop-up calculators don't have and is extremely easy to use.

RAMcalc has :- Memory
Percentage %
Square roots
Exponents
Exchange of display and last entry

Numbers are entered from the keyboard or keypad and arithmetical operators as you might expect to enter them:

Multiply : * X x
Divide : / D d

I'm sure you can guess the rest. Calculations are performed in the order that they are entered.

When you are done just hit ESCape to exit back to AppleWorks. You will notice when you later recall the RAMcalc Resident Calculator that it was exactly the same as when you left it.

3) A rather nice feature is available if you have an Apple mouse connected as you will then be able to move the cursor quickly around the screen. Also the button acts as 'RETURN' or ESCape.

The RAM Desk Manager

When you boot the plusRAM support diskette supplied with the plusRAM-16 and plusRAM-1 card a utility is executed that allows you to produce a RamDesk Startup Diskette on either a 5.25" diskette or a 3.5" diskette. When you boot the RamDesk startup diskette the program determines which type of machine you have and will produce one of two RamDesk Managers; double hi-resolution version for Apple IIgs and Apple //e enhanced; text screen version for the older machines. You will be requested to make a 'one-time' choice of how the memory in the plusRAM will be apportioned. The little table in Figure 1 shows the available options.

Option	Size of Workarea				Number
1	984				1
2	492	492			2
3	328	328	328		3
4	246	246	246	246	4
5	492	246	246		3
6	738	246			2

Four partitions is the maximum even for the latest high capacity plusRAM-16 cards, as will be evident from the above table.

On enhanced Apple //e and Apple IIGS computers a graphic RamDesk Manager is produced which utilises the double hi-res graphics producing Macintosh 'pull-down' menus with mouse control. The mouse operation is so easy ; just point and 'click'. It's child's play ; literally! One point, however, if you click the solid-apple in the top-left-hand corner you will pull down a menu showing the 'short-cut' commands (utilising the open-apple & closed-apple keys). If you don't have a mouse you can use keyboard commands. First press escape and then use the horizontal arrow keys to choose the menu. Vertical arrow keys can then be used to pick the option you desire in the menu.

On the older machines a text version of the RamDesk Manager will be loaded. This can also be loaded into the aforementioned two machines if the space bar is smartly pressed immediately on booting. The advantage of the text version of the RamDesk Manager is that it is faster at updating screens. After choosing the number of areas you will be presented with a text version of the pull down menus in forty columns :

Areas Disk Activate Restore
Backup Clear

You can choose the menu using the horizontal arrow keys and pressing return pulls down the menu. In the menu the same arrow keys allow you to select. When you have chosen a workarea its name, size, free space, operating system and catalog will be shown! you can even scroll through the catalog with < > or vertical arrow keys.

Most users of the RamDesk Manager will want to 'FLIP' between areas and/or perhaps use the main memory of the Apple whilst retaining the option to quickly return to their application(s) in the plusRAM. Therefore at the start of a session the workarea(s) will need to be formatted & have files uploaded. Also at the end of the session some portion of each workarea will need saving or backing-up. Backing-up is extremely important because of the volatility of RAM memory. The RamDesk Manager contains utilities to enable users to make back-ups (memory images) of their workareas very quickly onto 5.25" or 3.5" diskettes. These memory images are called 'FLIP' disks & can be used to restore workareas just as quickly. This technique has enabled CIRTECH to keep the cost of the product down and allow users to make these needed back-ups. Up to a megabyte of memory can be quickly saved onto eight 5.25" diskettes or two 3.5" diskettes. For larger areas the best way would be to use only 3.5" diskettes due to the logistical problems of dealing with a large number of 5.25" diskettes.

There is, in fact, another way of partitioning your plusRAM-16 if it is formatted as a ProDOS RAM disk. This involves the use of HD Mate a program Cirtech market for putting CP/M, Pascal and DOS3.3/DOS3.2 partitions onto hard disks. This program works perfectly with RAM disks, too.

Note: Current purchasers of plusRAM cards may like to give consideration to purchase of the plusRAM-16 rather than a plusRAM-1 particularly if they want to extend the memory at a later date. The 256K bit chips used in the plusRAM-1 cards will almost certainly increase in price in the future whilst the 1 megabit chips will decrease in price.

When you switch your machine off all the memory in the plusRAM-16 card will be lost but if you keep your machine on all the time these cards are a relatively inexpensive way to keep your most used applications. With a program selector you would be able to switch from application to application in a very few seconds.

Continued on Page 34

Ear Shattering Noises Off

Scott Freeman throws away his hearing aid and tunes into the Sonic Blaster

One of the reasons I bought my IIgs was for the superb sound capability of the Ensoniq chip. Anyone who saw the launch of the IIgs will never forget that blast of stereo music that we heard that day from an Apple II!

Now when I feel like a treat I connect up my HiFi to the speaker socket on the back of the IIgs and turn up the volume. The sound fills the room and gives a new dimension to game playing. I have even built the circuit that John Kishimoto designed and have been able to record my own sounds. With the launch of the Sonic Blaster, I wondered why I should buy something extra to do the same thing? Once I heard the thing blast away, I was converted. I had only being hearing a pale imitation of what the IIgs could do up to now. Of course there are other sound boards around. I have not heard these, so I can only describe the Sonic Blaster itself.

What do I do with sound?

If all you do is run AppleWorks then go no further. The Sonic Blaster will not help you. If however you play games, like to hear something other than the standard bell, or even want to be woken up with a trumpet call, then the Sonic Blaster is for you.

Sounds created with the Blaster can be edited and then used with SYSBEEP or STARTSOUND (both in the IIgs library).

What do I get?

The Sonic Blaster is in fact a card bristling with chips. There are two fly leads coming from it as well. It can fit into slots 1,2 or 6 if you want to record from it, or any slot if all you want to do is play sounds. There are two discs and a comprehensive manual in the pack as well.

How do I use it?

Fit the Sonic Blaster into a suitable vacant slot and set the Control Panel to 'Your Card' if you want to record. Connect the ribbon cable to the sound connector at the front of the motherboard and screw the Input/Output plate to a vacant hole in the back of the IIgs. Disconnect the internal speaker of the IIgs if you want to get the cleanest sound. Now all you need to do is to connect your HiFi to the mini stereo jack socket on the plate and away you go.

Applied Engineering have thought of everything. If you do not want to use you HiFi, you can simply connect a pair of small speakers to the plate, turn up the volume on the card and blast yourself that way. A pair of headphones can also be used, but beware of the volume levels!

What do I hear?

Many games these days have excellent sound. Zany Golf, which I have reviewed elsewhere in this magazine, has superb synthesized sound effects. These are the best kind of sounds to hear, the digitised sounds are not quite so clean sounding and tend to have a slight muzziness or distortion, the amount of which depends on the sampling frequency.

The sound is also much cleaner from the Sonic card than from the mono socket on the back of the IIgs. This may have been because I could control the input level to my amplifier more accurately on the card.

I tried running the Tapedeck program that we have in the library. This worked fine with the card, and played the 'Golden Earring' music that I had heard at the IIgs launch, with the same depth of sound that I had remembered. The big surprise was that all these old sound files were in glorious stereo!

The Software

Of course playing sound is only a part of the process. You need to be able to record it in the first place. This is where the SONIC.SYS16 file on the program disc comes into its element. You must have the slot set to 'Your Card' for the recording process to work. The program is simplicity itself to use. Setting levels, the bugbear of any form of recording, is taken care of in two ways. You can use the thermometer style VU meters, or use a large oscilliscope display. Either way you can easily see what the level is and set it to the optimum.

You are able to set the sampling rate that will be used. The slower this is, the longer the piece will play for, but the poorer will be the quality. For music the optimum rate seems to be around 21691 hz. This gives 24 seconds in mono or 12 seconds in stereo. The files I achieved were 524288 bytes long. A memory check showed that I had 170K free in a 1.25 mb system, whether a larger system would have given me longer files I have been unable to determine. If you slow the sampling rate down to 15184, you still get acceptable sound but the sound now lasts for 34 seconds in mono or 17 seconds in stereo.

This is not all. The sound that you have captured can be edited with full 'cut and paste' facility. This means we can trim sounds, combine different sounds and generally play with them. You can even set one of the two channels as an effects channel, and combine different sounds on each.

Complaints

Apart from playing sounds with SYSBEEP or STARTSOUND, there is little that you can do. It would have been nice to have had an all purpose sound driver that we could used with our own programs.

I feel the price is a bit steep at the introductory rate of £99. I would have thought that two thirds this price was about right. Perhaps this is the penalty we pay for living this side of the Atlantic!

Conclusions

An excellent product. It performs well and with the utmost friendliness. However, as already mentioned, it is an expensive way to get superb sound. If you like your games in surround sound however, it is a must.

Scott Freeman

info

Product : Sonic Blaster
Publisher : A. E.
Available from :
Bidmuthin Technologies
214 Kenton Road
Harrow
Middlesex HA3 8BT
(01 907 8516)
Price : £99 + VAT

Value : 🍎🍎🍎
Performance : 🍎🍎🍎🍎🍎
Documentation : 🍎🍎🍎🍎

The King of Chicago

John Kishimoto dodges the bullets to review this adventure game for the IIgs

The King of Chicago is one of a series of games produced by Cinemaware, which include such titles as The Defender of the Crown and Rocket Ranger. Unlike most adventure games, however, The King of Chicago is more of an "interactive video" requiring minimal input from the player. In fact, the game can be left to run on its own, making random decisions along the way.

The Scenario

The year is 1931, and Al Capone has just been convicted of tax evasion, leaving the Southside of Chicago to Tony Santucci. You are Pinky Callahan, a mobster with ambitions to take over, first the Northside organisation, then the whole of Chicago.

Your boss, the Old Man, is getting too weak to rule the Northside gang, and you decide that you should replace him as leader. That requires getting Ben, the number two, to back you, and ensuring the loyalty and support of the rest of the gang members. That also includes Lola, your girl, who has ambitions to match your own.

The Game

This is a graphics based game, which makes good use of the capabilities of the GS. Control is achieved by moving a Fly (Fly on the wall..) pointer using the mouse, and selecting one of a selection of 'thought balloons' which appears when a decision has to be made. Be warned though, hesitate, and the computer will randomly select one for you. Pinky will meet and carry out conversations and actions with other characters in the game, based on your decision. A wrong choice often results in an untimely death.

In addition to controlling Pinky, you will occasionally take part in drive-by bombings and shootouts (requiring good timing), and at other times make financial and strategic decisions.

Surprisingly, this game doesn't allow the player to save his current position on disk. The only option is "intermission" (or pause). Considering that Cinemaware suggests a 'Billion' possible ways to play the game, a save option would have been essential. On the other hand, a winning game can apparently be played in about an hour.

The game is supplied on two disks (called appropriately enough) REEL 1 and REEL 2. Although two drives are recommended, it will function adequately with one drive.

Minimum memory requirement is 768K, with 1Meg suggested for improved speed. Hard Drives and Ramdisks (at least 2Megs required) can also be used.

Available from MGA, PearTree, Appledore, Kent, TN26 2AR, for £34.95 inclusive of VAT and post and packing.

K John Kishimoto

HotLine News

Dave Ward brings us his monthly roundup from the HotLine

During the last few months I have been receiving quite a lot of both written and telephone inquiries, largely from new members, regarding companies who repair Apple][plus computers. Apparently the reason for this is that many companies and education establishments have been shedding their Apple][plus and in some cases Apple //e computers to 'upgrade' their systems. Unfortunately they do not appear to be buying Macintosh computers or even later Apple // computers; why? Most of these machines reach the 'market' without any manuals and some either have hardware problems or soon develop them. The difficulty is where can such machines be repaired. Would any members who know of a good repairer or who have successfully had their machine repaired to please let us know so that we can pass the information on to others.

Epson 8132 card

A favourite question on the Hotline is interfacing the Epson 8132 card with AppleWorks on the Apple][plus I get this question at least once a month! With the increase of Apple][plus computers on the second-hand market the incidence of this question may well increase. Although this question has been dealt with in a previous Hotline news item it seems appropriate to deal with it again. The Epson 8132 did not, apparently, follow the strict Apple Computer Inc. Guidelines for printer interface cards and as such cannot be recognised as a printer interface card by AppleWorks - pity. Bob Sather of Dark Star Systems designed a new EPROM to replace the one on the 8132 to give the card the capabilities of a Grappler and more. Fortunately that EPROM is still available directly from Bob at:

Dark Star Systems
78 Robin Hood Way
GreenfordMiddlesex
Telephone 01-900-0104

During the time I have been dealing with Hotline inquiries (January 1986) I have had the assistance of many other members in, hopefully, answering questions put mainly by other Apple 2000 members. I would like to take this opportunity of thanking them and also to ask any other members who have specific knowledge, and wouldn't mind the occasional telephone call in the early evening to contact us. Members will, I am sure, have noticed that Tony Dart has generously taken on the Macintosh side of the Hotline. Tony has been taking the brunt of Macintosh enquiries for the last year and I am sure that Macintosh members will feel happier to be able to contact a member who is an expert Macintosh user directly rather than via me. If you have a Lisa problem, contact John Lee who may be able to help you.

PSION Organiser

Alex Rollo rang the Hotline some weeks ago regarding methods of storing data in the Psion Organiser on Apple disks. Unfortunately we were not able to find anybody who had done this. This was so important that Alex spent a lot of time and at last managed to solve the problem with the following hardware and software:

Apple //e computer
Pace Mastercard
Data Highway
Psion Organiser

All Alex had to do, in his words, was to follow the information in the manuals. I suspect that it was just a little more difficult than that. Any members who would like to know the details should contact me and I'll put them in contact with Alex.

Apple II Fonts

During the last few months I have received many enquiries regarding the FONT files used by that excellent Apple // DTP program, Publish It! Apparently these files are of the same internal format as the Apple IIgs FONT files but have the file-type $F7 rather than the authorised Apple IIgs file-type $C8 or FON. The problem is that users cannot use the Publish It! FONT files with other programs and vice-versa. Why the authors of Publish It! chose the file-type $F7 for their FONT files is not known. It could be an oversight which is forgivable but should be addressed at a later version of the program. If on the other-hand it was done purposely to prevent genuine users using the FONT files with other programs then that is not forgivable since it also prevents the use of other FONTs with Publish It!

The problem can be overcome by changing the file-type as discussed by Ewen Wannop in the December issue of Apple 2000. This can be reasonably simple for the odd file if you know how to do it but can be very tedious for a whole disk or dirctory of such FONT files. I therefore present a little Applesoft program on the next page that will allow one to change all such FONT files in a directory from $C8 to $F7 or vice-versa. No other files will be affected.

Dave Ward

Continued from Page 31

The one megabyte plusRAM-16 we were loaned for this review worked perfectly even though it was used in many different Apple // computers. The power consumption of these memory cards is so small that they appear to generate no heat.

Dave Ward

PlusRAM-1 and plusRAM-16 cards are available from:

Cirtech (UK) Ltd
Telephone 0896-57790

Bidmuthin Technologies Ltd
Telephone 01-907-8516

Holdens Computer Services
Telephone 0772-615512

MGA SoftCat
Telephone 0233-83571

Prices:

PlusRam-1 256k	£129.00
PlusRam-1 1 meg	£279.00
256k upgrades each	£50
PlusRam-16 1 meg	£229.00
PlusRam-16 2 meg	£354.00
PlusRam-16 3 meg	£479.00
PlusRam-16 4 meg	£604.00
1 meg upgrade each	£125

Font Type Changing Program

```
10  GOTO 50000
2000  REM  "— Read the DIRectory in FI$ —
2010  PRINT  CHR$ (4)"OPEN "FI$",TDIR
2020 FI% = 0
2030  PRINT  CHR$ (4)"READ "FI$
     : INPUT A$
     : INPUT A$: INPUT A$
2040  INPUT FD$(FI%)
2070  ON  LEFT$ (FD$(FI%),12) = "BLOCKS FREE:"
GOTO 2090
     : FI% = FI% + 1
     : GOTO 2040
2090  PRINT  CHR$ (4)"CLOSE"
     : FI% = FI% - 1
2100  RETURN
3000  REM  "— Setup Machine code to SET & GET File
     info —
3010  POKE 768,32
     : POKE 769,0
     : POKE 770,191
     : POKE 772,7
     : POKE 773,3
     : POKE 774,96
     : POKE 775,10
     : POKE 776,25
     : POKE777,3
     : RETURN
4000  REM
4020  FOR M = 1 TO FI%
     : POKE 775,10
     : POKE 771,196
4030  FOR N = 2 TO 16
     : CH% =  ASC ( MID$ (FD$(M -1),N,1))
     : IF CH% = 32 THEN L% = N - 2
     : N = 16
     : GOTO 4090
4040  POKE 793 + N - 1,CH%
4090  POKE 793,L%
     : NEXT N
     : CALL 768
     : IF  PEEK (779) = TF% THEN  POKE 775,7
     : POKE 771,195
     : POKE 779,TT%
     : CALL 768
4100  NEXT M
4120  RETURN
50000  REM
50020  DIM FD$(150)
51000  PRINT  CHR$ (4)"PREFIX"
     : INPUT PF$
51010  HOME
     : VTAB 6
     : PRINT "Enter the full pathname eg /
     LIBRARY.6/FONTS/"
     : PRINT "of the DIRectory where the fonts
     live >";
     : INPUT FI$
     : PRINT  CHR$ (4)"PREFIX "FI$
51020  VTAB 12
     : HTAB 5
     : PRINT "1> FON -> $F7"
     : VTAB 14
     : HTAB 5
     : PRINT "2> $F7 -> FON"
     : VTAB 18
     : PRINT "Enter <1 or 2> ";
     : INPUT K$
     : K% =  VAL (K$)
     : IF K% = 1 THEN TF% = 200
     : TT% = 247
51030  IF K% = 2 THEN TF% = 247
     : TT% = 200
51040  ON  NOT (K% = 1 OR K% = 2) GOTO 51020
51050  GOSUB 2000
     : GOSUB 3000
     : GOSUB 4000
51060  PRINT  CHR$ (4)"PREFIX"PF$
51070  REM  "--- All over Directory Restored ---
```

Cirtech SCSI

Dave Ward takes a look at an alternative to the Apple variety of SCSI interface

Cirtech have introduced a SCSI interface card for the Apple // range of computers. In keeping with other Cirtech products the card is smaller and less expensive than the competition.

The card arrives in the usual yellow box together with a 31 page manual and support software on both 3.5" and 5.25" diskettes. The 3.5" diskette only has ProDOS support software whereas the 5.25" diskette has CP/M and DOS3.3 support software. The manual clearly describes the installation and use of the SCSI card and software and finally with troubleshooting and technical information on the operation of the SCSI card.

Installation is not trivial but quite easy as we shall see. SCSI devices that are daisy-chained must have a unique number to ensure that they can be individually recognised by the system. On the SCSI card are eight pairs of pins numbered 0-7 with a plug that can be used to connect any pair together. Before you connect your hard disk or plusDISK SC to the card you must check that each has a different identity number. This having been done one can proceed. Before plugging in the SCSI card you will notice another set of three pins with a two pin plug that can connect two of them. One position is termed 'fast' whilst the other is termed 'safe'; we'll discuss these options later on. The card can then be plugged into a slot and the twenty-five pin connecters of the 'disk' and card joined. Users of plusRAM cards will know that there are some slots in Apple // computers that cannot be used for the following reasons:

1) Slot 3 cannot be used in a European Apple //e if an 80 column card is installed in the auxiliary slot 3.

2) If you have an enhanced Apple //e it is advised that you place the Cirtech SCSI interface card in slot 7 as it can be auto-booted from there.

3) If you are going to use Pascal 1.3 you should place the Cirtech SCSI interface card in slots 4,5 or 6 so that Pascal 1.3 will recognise it as a disk.

4) In an Apple IIGS you may place the Cirtech SCSI interface card in 1-7 except slot 3. For slots other than slot 7 you must enter the 'control panel' to recognise your card. You can also arrange to boot from any slot in an Apple IIGS.

5) Slot 0 on an Apple][plus cannot be used because that particular slot is designed only for the 16K bank switched card. In any case ProDOS must have a 16K card in that slot!

In older Apple Computers such as the Apple][plus and the 6502 Apple //e it is advisable to set the plug so the card is in 'safe' mode. If for some reason the card does not appear to be recognised try the 'safe' mode, just in case.

On the next page is a CATALOG of the 5.25" diskette showing the utilities available. When you boot this diskette you are presented with a menu from which you can choose the Apple Filer program or the partitioning program. The partitioning program allows one to produce special areas on the ProDOS formatted disk which can be CP/M, Pascal or DOS3.3. This is very similar if not the same as the HD Mate software which Cirtech market separately to allow users of hard disks and RAM disks to produce such partitions.

Let us have a look at some of these options :-

B - takes you to Applesoft BASIC.
F - is the Apple Computer Inc. Filer program to copy files etc.
S - Partitioning.

Like the plusDISK and plusRAM-1 and plusRAM-16 cards the SCSI interface allows one to partition the disk into separate areas for use by different operating systems.

First the SCSI disk must be ProDOS formatted. You can then boot one of the plusDISK support diskettes and when the main menu appears choose the S option for partitioning when the following menu appears :-

```
SCSI PARTITIONING PROGRAM V1.02

SCSI DRIVE 1 IN SLOT 7 IS SETUP
AS FOLLOWS :-

TOTAL SIZE = 7 128K BLOCKS
FREE SPACE = 1 128K BLOCKS

PRODOS = 7        (896K)
PASCAL = 0        (0K)
CP/M   = 0        (0K)
DOS    = 0        (0K)

DO YOU WISH TO <C>REATE OR
<R>EMOVE AN AREA, 'Q' TO QUIT
```

In the above you will notice that the PASCAL area is assigned no space. On choosing the <C>REATE option you will be asked how much space you wish to assign to PASCAL 1.3.

Like HDMATE the partitioning program cordons off areas of the ProDOS formatted disk which appear as ProDOS SYStem files. To choose a particular system you just execute that file. This is a very friendly and effective way of partitioning the disk.

On the next page is a CATALOG listing of a SCSI disk with all three areas.

From the Applesoft prompt] you just type -CPM to enter the CP/M system. Cirtech also supply a menu program - notice the SCSI.SYSTEM in the above CATALOG listing - which lets you choose one of the three areas. For more a complicated set-up you could use ProSel to move between applications. For instance I created a plusDISK SC with AppleWorks in a directory, thirty other ProDOS utilities and the DOS, CP/M & PASCAL work areas. Moving from PASCAL to AppleWorks took just 3 seconds!

The first time you try to activate an area such as CP/M it will not boot and you will requested to place a CP/M start-up diskette into a suitable drive. When you have done this and the diskette has booted just place your plusDISK support diskette (5.25" only) into the drive. If you take a DIRectory of this diskette you will find that there is a utility SCSI.COM and if you execute this your plusDISK partition will be formatted so that you can save files there and even boot-up the system.

Setting up areas for DOS and PASCAL 1.3 is just as simple.

If you ever need to back-up the whole SCSI disk this can be done with RAM disk back-up programs such as the one on the Beagle Bros.

BIG U disk or from ProSel, even if the SCSI disk is partitioned. Using this technique you can even back-up a whole SCSI disk formatted for, say, CP/M only by first formatting in ProDOS then making the largest partition possible.

Cirtech have also introduced an SCSI Multi User Network System which is supplied on disk. This is a software system consisting of 3.5" and 5.25" diskettes and a small manual. The system lets one connect up to seven Apple // computers onto a single hard disk or six Apple Computers to two daisy chained hard disks; two hard disks is the maximum though. Note that the total number of SCSI devices including interface cards and hard disks is 8; the maximum number of SCSI numbers available. So far we have tried out two Apple // computers into a one megabyte plusDISK SC without problems, we will, however, be testing this out more thoroughly and report this in a later review. Basically the system allow one to create a partition or partitions on the shared hard disk that can only be accessed by the computer that created them. The advantage of such a system is obvious.

The Cirtech SCSI interface card we were loaned for this review worked perfectly except on two occasions:

The first when we tried to connect an already formatted hard disk which had previously connected to an Apple SCSI interface card. The Cirtech interface card refused to recognise the disk. This is because the Apple SCSI interface creates a slightly different format on the disk which the Cirtech SCSI interface card does not recognise. We would have had to re-format the disk to use it.

The second is that GSOS does not recognise third party SCSI interface cards unless the GSOS is actually booted from the disk connected to that third party SCSI interface card. Setting the Cirtech SCSI card to 'safe' allows one to set up the disk connected to the SCSI interface card. When this is done switch off and change the plug back to 'fast' mode. When Apple release details of their SCSI interface Cirtech will produce a modified card for GS/OS.

Dave Ward

Prices:

Cirtech SCSI Card	£54.00
MultiUser Software	£58.00

Available from Cirtech, MGA, Bidmuthin and others.

CATALOG of 5.25 Disc

```
Directory: /SC/                                    Page 1
13-FEB-89

Filename          Blocks Type  Modified  Created   Length Subtype

PRODOS_____________  32  SYS  9-AUG-88  1-NOV-88  $3C7D  $0000
BASIC.SYSTEM_______  21  SYS 18-JUN-84 [no date]  $2800  $2000
PLUS.0_____________   6  BIN 17-AUG-88 [no date]  $8EE A=$4600
SYSTEM_____________  10  BAS 17-AUG-88 [no date]  $1118  $0801
STARTUP____________   3  BAS  6-FEB-89  6-FEB-89  $310   $0801
FILER______________  51  SYS 18-JUN-84 [no date]  $6400  $2000
SCSI.SYSTEM________   3  SYS 24-JUN-88 [no date]  $321   $2800
DRIVER.SYSTEM______   3  SYS 29-AUG-88 [no date]  $3FD   $1000
FORMAT_____________   9  SYS  6-FEB-89  6-FEB-89  $E9B   $2000
SCSI_______________  10  SYS 19-JAN-89 20-JAN-89  $112A  $2000
FIX.BAD.BLOCKS_____   8  SYS 19-JAN-89 20-JAN-89  $D1B   $2000

Blocks free:33 Blocks used:247 Blocks in dir:156 Total blocks:280

Number of standard files:11        Number of subdirectories:0
```

CATALOG of SCSI Disk

```
/PLUS.DISK.SC

NAME          TYPE BLOCKS  MODIFIED      CREATED       ENDFILE SUBTYPE

PRODOS         SYS  30   18-SEP-84  0:00 <NO DATE >    14848
SCSI.SYSTEM    SYS   3   21-DEC-87 13:14 <NO DATE >      801
DOS            SYS   1  <NO DATE >      <NO DATE >      512
CPM            SYS   1  <NO DATE >      <NO DATE >      512
PASCAL         SYS   1  <NO DATE >      <NO DATE >      512

BLOCKS FREE:  474    BLOCKS USED: 1574    TOTAL BLOCKS: 2048
```

60 into 20 does fit after all

Confessions of a Memory Junkie

Part Two - by Ewen Wannop

This memory thing gets to you after a bit. I wrote last year how I had threaded my way through the SCSI jungle and fixed myself up with a 20 mb hard disk on my IIgs. Several hard drives and learning curves later, I now have 90 mb on the TABBS Bulletin Board and 62 mb on my IIgs. The former was quite a saga, the latter took about 20 minutes. The main lessons to emerge from all of this was the ease with which a drive can be added to to an Apple II, the difficulty of adding a drive to a Mac and the mess the IBM people can get themselves into.

The TABBS Bulletin Board was due for a memory transplant and so we ordered an 80 mb drive kit for it. The dealer sent us the drive, software and a controller card to run it. Several frustrating days later, the dealer admitted that the drive, the software and the controller did not match. We were sent a 70 mb drive in return, and a refund on the difference in price! In the process of fitting the new drive, the motherboard blew up and put TABBS offline for a week!

TABBS now has the new 70 mb and the original 20 mb on the same controller card giving us a grand total of 90 mb storage. The problem we now have of course, is how to back that lot up! A tape streamer looks like the next item on the TABBS shopping list.

However, back to my IIgs and its 20 mb drive. I had been glancing through the American Computer Shopper magazine and noticed that the Seagate ST277N 62 mb SCSI drive was exactly the same size and shape as the Seagate ST225N 20 mb drive in my Apple 20SC unit. The power they both needed was the same .... what if I did a transplant and changed the drive unit updating my storage to 60 mb?

First steps

I was warned that this was going to be difficult. The drive had to be low-level initialised before formatting and final partitioning. The partitions are necessary as ProDOS can only see 32 mb in any one device. The low-level initialising was supposed to be the real problem. There were acres of advice, both from Apple and others, saying not to do it unless you really knew what you were doing. Drives bought commercially have had this initialising already done so you never are faced with this problem.

As I was searching Compuserve one day, I came across two programs for the Apple II that allowed this initialising to be done easily, and also a step-by-step account of a successful construction of a 62 mb drive. I decided I would take the plunge.

The drive arrives

Through a friend I was able to buy an ST277N unit for £345 (VAT included). This is the trade price of a drive, shop around, you should be able to get one also for that price. Make sure that any unit you buy is a SCSI unit. All the Seagate units have the suffix 'N' if they have an embedded SCSI controller.

With trembling hands I unpacked the drive. After admiring all the bits and pieces, I put the drive down and opened my SC20 box. Opening an Apple hard drive box appears to be a bit of a puzzle at first as there seems no way in. With experience I can now do it in about 10 seconds flat.

Use a small screwdriver and press in the two lugs that show in the rear venting of the drive. Gently prise the lid up about an 1/8th of an inch at these two points. Now go to the side of the box, and push the two notches inwards, starting with the rear one first. Gently lift the lid at the same time. Repeat on the other side of the box. The lid should now hinge up and come clear.

The old drive removes by easing a large plastic catch at the inside of the front of the box. Lift the drive upwards and out towards the front. Before you remove it completely, undo the large 50 way connector, the small ribbon cable to the SCSI ID switch at the switch end and the 4 pin power cable.

The original drive is screwed by four screws to a metal base plate. The front LED is plugged in to a small 2 pin Molex connector on the drive itself. The new drive had the LED soldered directly to the board. You can either deftly swap these two with a fine soldering iron, or as I did, simply remove the original LED from the new drive and solder the fly lead of the old LED directly to the new board.

With the new drive back on the old base plate, the connectors back in place (the SCSI ID plug goes on to the three sets of bare pins), I put the whole thing back into the box. All was now done bar the formatting, and I had only taken about 20 minutes so far.

The dreaded Terminators

With every piece of literature I have seen about SCSI, there has been the insistence that Terminators must be fixed, and in a defined order. A SCSI chain must have a Terminator at each end. One already exists in the computer or SCSI card. We must have another one fitted to the last device in the chain. There should not be any more in between these two. With my original SC20 I had to buy an external Terminator block to do this. This can be quite an expense if you buy an Apple one. Some drives I had seen did not appear to have one fitted at all. The plot was beginning to thicken.

However all became clear when I compared the brand new drive and the one that Apple had fitted.

The new drive had three resistor Terminator packs on the drive itself, the old drive had these removed. It was clear that Apple had removed them so you would not ever need to open their box if you are adding more devices to the chain. If you wish, you can leave these Terminators on the drive, but do not add any more devices to the chain without removing them first, or making sure that there are no more in the chain.

The Crunch

Now I was at the point I had been warned about. I had to initialise and format the drive. In the end it turned out to be so easy, that I wondered what all the fuss had been about.

The low-level initialising prepares the drive for use by laying down the way the tracks and sectors lie, and arranges the interleave that allows the optimisation of disk access speed. Once this has been done, and this is the part that is normally done for you, then it is a simple matter to format and use the disc.

There was one small complication, as I had a drive that was larger than 32 mb. ProDOS required it to be partitioned into at least two areas or it would not see the whole amount. More than two would cause problems with drive allocation. Having two partitions allowed both drives 1 and 2

of the slot to be allocated.

My first reaction was to use the Advanced Disk Utilities from GS/OS. This however does not lay down partitioning information on the drive itself, so you must use the HDSCPartition program from the Apple SCSI Card Utilities disc to create an actual partition on disk.

To do the low-level intialising, I used the SCSI Hacker program. This is to be found on TABBS, and in due course on an Apple II library disk.

I used an interleave of 12 and followed the screen prompts. After only 8 minutes SCSI Hacker told me I had successfully formatted the drive. On an IBM this would have taken nearly double that time.

I then used the HDSCPartition program to divide the drive into two. Just tell the program to divide the drive into two. Don't worry that it says you only have 20 mb on each partition, we shall change that later.

After this step, I ran Copy II+ and asked it to format the two partitions. At this point I was able to name them as well. Now I had apparently two drives of 20 mb each. To get the true sizes I needed to run Advanced Disk Utilities.

If at any point you run things from the Finder, and get a message saying it does not recognise the drive. Simply tell it to eject it. It will not of course be able to throw the hard disc out and you carry on regardless. Do not chose Format, it will undo all the partitioning work you have done so far!

Advanced Disk Utilities showed the missing megabytes. It was a simple matter to resize the two partitions to 31 mb each, the ST277N having 62 mb usable space in all.

If you do not have a IIgs then you would need to find someone with one, or a friendly dealer, to achieve this last step in the process.

Build it yourself

There is so little inside a hard drive box, that it made me think further. There is only a power pack, a fan, a 50 way SCSI connector, an LED and the SCSI ID switch.

The power pack only needs to give 13 watts at +5v at 1.4 amps and +12v at 2.0 amps. The output should be a standard IBM style power connector. It should not be difficult to obtain an IBM miniature power pack or to build one yourself.

There is a small fan to cool the whole thing down, but as it is mainly the power supply that gets warm, you could dispense with this if you provided adequate venting.

The drive has a 50 way IDC plug that mates with a free 50 way socket. This 50 way socket has to be connected to a 25 way 'D' socket on the SCSI card. You can do this easily by using 25 way ribbon cable wired to a 50 way connector. Figure 1 shows how to wire the two together.

There is no need to use a SCSI ID switch, small jumpers directly on the pins can take care of that.

If you can spare your sandwich box, you mount the whole lot into that. If you want it to look very smart, contact your dealer for an Apple SC box. This is available as a genuine Apple spare part!

I reckon that in the end you could have a 60 mb drive built and working for around £400 (inc VAT).

The real crunch

All this was of course done on an Apple IIgs. An Apple II would have done just as well up to the final expanding of the partitions. However, the friend who got me the drive, also got one for himself to put on his Macintosh.

We prepared it in exactly the same way, but missing out the partitioning stage. In fact I used the GS Finder to do the final formatting, and was told that I had a 62 mb drive, but that the current operating system ProDOS, could only see 32 mb of it!

Then the problems started. The Mac was designed before SCSI and so has no built in low level SCSI driver. The Apple II SCSI card was designed later, and so has the driver on the card! To use a drive on the Mac, you need to prepare a SCSI driver and install it on the disc in such a way that it is self-loaded on boot.

If the drive unit is one that Apple use themselves, then the SC Setup program will actually do this for you. If not, then you have to build your own driver the hard way. You will need the SF&I (SCSI Formatter and Installer) program to do it. This was in fact what all the warnings were about.

After some time, he has successfully got the SF&I driver sorted out for the ST277N unit and has a full 62 mb to play with. We have put the driver and the SF&I program on TABBS for anyone interested in preparing a drive themselves. There is a warning here though, you should read the Text file with the driver carefully. You must have a Mac with at least a 128K ROM. Also some early 128K Mac's will not boot from the ST277N drive.

Moral

If you want to add mass storage the cheapest way, build it yourself.

If you want to do it the easiest way, expand an Apple II.

If you want to do it on a Mac, buy a ready made drive.

If you want to do it on an IBM, get an insurance policy ...

Ewen Wannop

Connecting a SCSI Drive to the 25 way SCSI connector

25 way SCSI	SCSI Drive 50 pin
1	48
2	42
3	50
4	40
5	38
6	36
7	35,37
8	2
9	39,41,43
10	8
11	12
12	14
13	16
14	1,3,5
15	46
16	7,9,11
17	32
18	13,15,17
19	44
20	18
21	4
22	6
23	10
24	45,47,49
25	NC

STOP PRESS

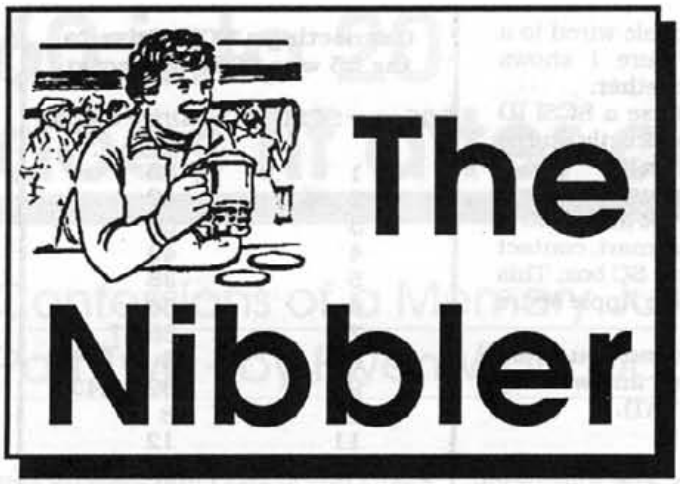
Cupertino 4-1-89

It was announced today that the Macintosh line of computers is to be phased out over the next few months. There will be no further support from Apple for the Mac after the changeover is complete.

In its place a new computer will be released. The new computer codenamed 'Pack-A-Mac', will run under a 64 bit chip. This chip has been developed under great secrecy and little is known about it so far. We do know however that it has a RISC instruction set, thus making it incompatible with current software. The newly developed 16 mb memory chips will be used in a paged configuration to give 64 mb of available Ram.

It is understood that at first the machine will be offered under an upgrade policy. This poses the problem that existing software will also haved to be upgraded in the process. As the new 2.88 mb drives will be used in the machine, it is doubtful that any existing data disks can usefully be retained.

Some will view this new machine as a breakthrough, others will view it as another onslaught in the continuing war of interminable upgrades. IBM led the way in this, it looks like Apple is now following close behind.



Seeing Ewen's comments about TABBS in the March Slices, I dusted off the trusty modem and had a look. My what a change! The Macintosh side of things looked very thin last time I was there, now there is acres of software for downloading. I gather that there over 22 mb already available and it is growing fast. Ewen only has 70 mb left before he will need to upgrade the storage again!

A quick check of callers showed a dramatic increase. We should now see as lively a discussion area on TABBS for the Mac as we have for the II's. Give it a call, and leave a message, someone out there I am sure wants to hear from you!

While I was there I had a good look around, had a pint in the Lounge Bar and read the News. I knew Ewen had Steve Gold's weekly NewsBytes for downloading, but I see he has added a Hotline News as well. These Hotline News files are updated about twice a week, and contain all the bits that NewsBytes leaves out. No excuse now for being out of touch with the computer world!

I had the opportunity of trying out Ventura Publisher on an IBM XT the other day. I know I am biased, but really and truly, what do these IBM people think computers are for? I spent a most frustrating half hour just trying to load some text in and do something useful with it. Nothing worked intuitively, menus kept staying on screen when I did not want them to, I could not sensibly choose a text file I knew was there and the whole thing was so clumsy I wondered how on earth people put up with it. Then I remembered the price of a Macintosh and all became clear to me! We expect quality from Apple computers, but we pay a great deal for that privilege.

I was pleased to see Slices are now publishing a Letters page. It does seem odd however that nearly all the letters are from Apple II users. Surely the Macintosh brigade have things they can write about as well. Do they not have problems in the same way that the Apple II people do? Come on all of you, write a letter, or better still an article. I know you all think your machines are superior to the Apple II, let us know about it, or we will begin to think that you know you are wrong!

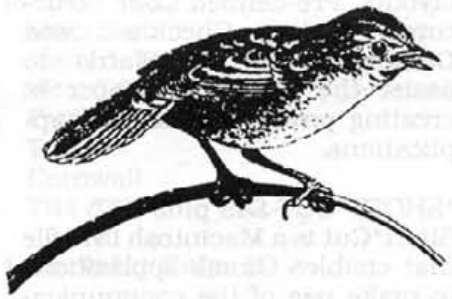
It is interesting to see the amazing growth of the Fax machine. We all thought that systems like Telecom Gold would spell the death knell of Telex. But it is the Fax machine that has finally managed the deed. They sprout everywhere these days. I was laughed at the other day when I said our firm did not have one! Of course I can send a Fax from my Force mailbox on Telecom Gold, but I can't receive one yet. The needs of a Fax system are so close to that of a computer like the Macintosh, that is not surprising there is a flood of Fax add-ons appearing. I understand that the FaxSTf system reviewed in the last magazine works very well indeed. How long till we have a Fax card for the Apple II?

We have just had an Apple Scanner delivered at work. This is linked up to one of our SE computers. I am very impressed with the quality of the scans. The surprise to me was that a TIFF file generated from the AppleScan software would make an excellent halftone in PageMaker. The hitherto dimmed menu item 'Image Control' lit up, and I was able to control each of the 16 tones at will. However, when I tried to scan an image larger than about 3 inches square, it told me I did not have enough memory! Looks like a 4 mb upgrade will have to be next on the shopping list.

You will notice fewer advertisements in this issue of Apple2000. There has been a rash of changes to the Macintosh magazines in the last month. Some are going fortnightly, others are starting up. The advertisers naturally are being cautious, and spreading their advertising. This means that we at Apple2000 suffer. Please support our advertisers and let them know you saw their advertisement in Apple2000. This way we shall keep their goodwill, their advertising, and give you a better magazine in return.

The Nibbler

MacChat



Norah Arnold looks at the latest Macintosh developments and product news.

Blyth Software Ltd, producers of the 'Omnis' range of microcomputer database and applications development software, launched a search for the best young software designers of 1989 among Britain's Universities, Polytechnics and Colleges of Higher Education.

The Young Software Designers scheme has been devised by Blyth Software after discussions with the Combined Higher Education Software Team (CHEST) and in response to the growing skills shortage. The Commons Trade and Industry Committee, the Information Technology Skills Agency and the Computer Services Industry Training Council have each produced reports on the IT skills shortage during the last twelve months.

Paul Wright, Chairman and Managing Director of Blyth Software said today "To compensate for the predicted shortfall of skilled staff in the IT industry over the next five years, the computing profession must encourage people to see IT in general, and programming in particular, as interesting areas of work. We want to encourage commercially useful design skills to the next generation of programmers and attract young people into the computing industry."

Three award categories will be judged by an 'applications development' specialist, a leading computer industry journalist and the Product Development Manager of Blyth Software Ltd. The categories are:

* Best Presented Application' for which the prize is a Tulip AT 386 sx personal computer donated by sponsor Tulip Computers UK Ltd. * 'Most Original or Innovative Application' for which the prize is an Apple Macintosh Plus personal computer donated by sponsor AppleCentre (West London) Ltd.

* 'Best Utility, Add-on or General purpose Tool' for which there are five prizes comprising any Omnis single-user package of the winner's choice, donated by Blyth.

Entry packs are currently being sent to 190 Universities, Polytechnics and Colleges of Higher Education throughout the UK. Entrants must be first, second or third year undergraduate or postgraduate students in further education. Entries must be verified by a member of the institution's teaching staff and returned to Blyth Software by 31st May 1989. The awards will be announced at the end of June.

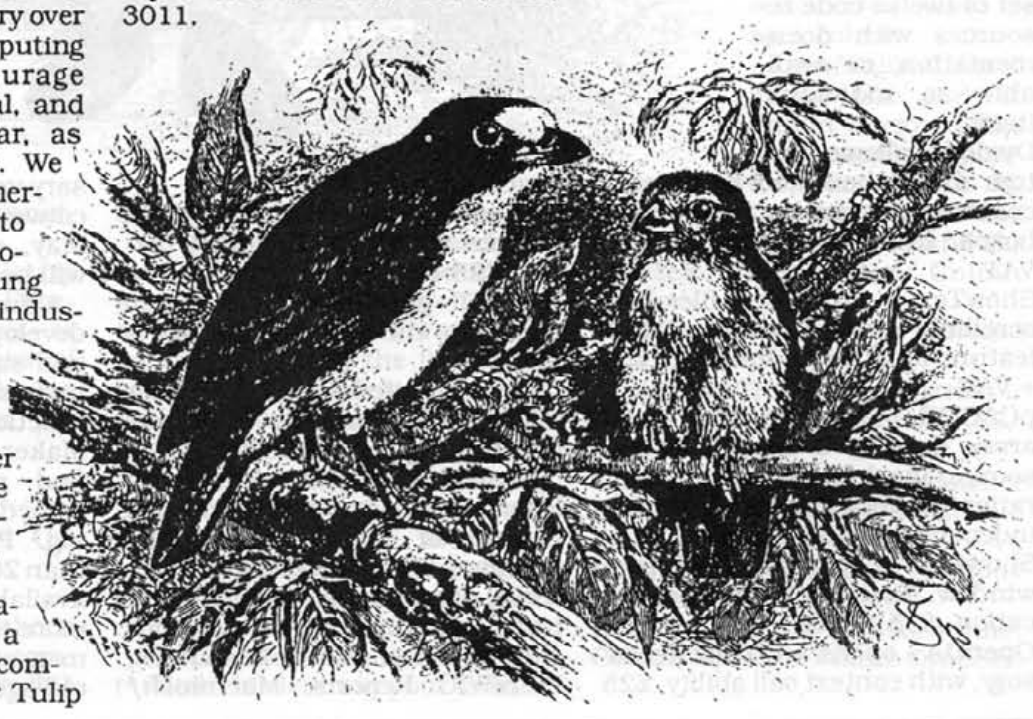
For further information contact Debbie Charman, Press Officer, Blyth Software Ltd, Tel: (0728) 3011.

New collection of 'Omnis' add-on products from Blyth

Blyth software is now marketing a collection of add-on products for Omnis 3 Plus, the company's high-performance business database and applications development program for the Apple Macintosh range of personal computers.

The five add-on products, some of which have been released by third-party developers specifically for use with Omnis 3 Plus can enhance and improve both new and existing Omnis applications and include the following:-

*SMARTPAD-£49 plus VAT
SmartPad is a free-form notepad which can hold up to 32K of information on each page and retrieve any page instantly. Ideal for development notes, phone lists, ideas jotter etc.



*A.S.K. -£199 plus VAT
The Application Starter Kit (A.S.K.) is a collection of Starter layouts, Pre-defined Code Structures, Coding Checklists and Documentation Standards to assist the Omnis developer in creating professional Omnis applications.

*SHORT*CUT-£49 plus VAT
Short*Cut is a Macintosh INIT file that enables Omnis applications to make use of the communications ports on the Macintosh. Typical uses of Short*Cut include accessing stock updating services, automatic transfer of data to other programs, e.g. Excel, etc.

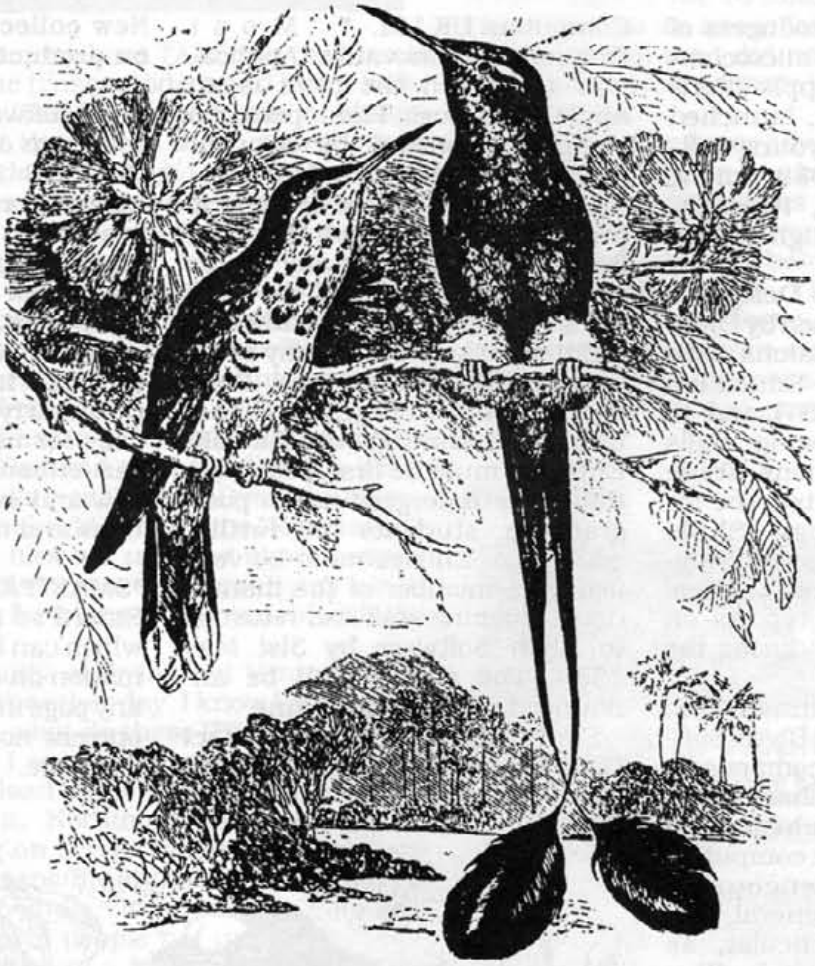
*OMDEX-£99 plus VAT
Using Omdex, an Omnis developer or user can add multiple pop-up scrolling lists to an Omnis application which allow the user to 'point and click' at the required record from within the list. Omdex is fast and can make even the best Omnis application better and easier to use.

*OTOOLS -£245 + VAT for a complete set of twelve code resources with documentation, or available as individual items:-
Dyalog - allows custom dialog boxes to be created containing radio buttons, check boxes, lists, text, icons. £45 + VAT.
ShowText - shows text files in a scrolling window, with a 'Find' feature. Ideal for on-line help. £35 + VAT.
pCACHE - caches and retrieves array data in a library file resource; ideal for storing configuration information that is datafile independent. £35 + VAT.
ShowPICT - shows a PICT in a window. Returns mouseclick location. £35 + VAT.
OpenDA - opens any desk accessory, with context call ability. £25 + VAT.
PickPrinter - allows selection of printer without using the chooser. £25 + VAT.
StdFile - does Open and Save dialogs, returns pathname in #S1. £25 + VAT.
MenuBar - disables menu bar and window close box, or individual menu items. £25 + VAT.
PlaySnd - plays 'snd' resources. £25 + VAT.
SysInfo - returns system information such as software version, system folder pathname, disk space, etc. £25 + VAT.
Button - puts real Macintosh buttons right onto the entry layout. £25 + VAT.
PutPICT - puts logos, borders, etc. right onto the entry layout. £25 + VAT.

An unlimited-use licence for OTOOLS is available to Omnis developers for £595 + VAT.

Blyth Software has recently released a major new Macintosh version of Omnis, known as Omnis 3 Plus Extended Edition, which offers many additional features over previous versions including External Code Resources, WYSIWIG Reports, Macintosh/IBM connectivity, Larger Datafiles and Libraries, etc. Upgrades to both single and multi-user versions are available.

Macintosh users can take advantage of the special prices offered for the Omnis add-ons during the upgrade program, by calling Blyth's London Sales Office on (01) 346 9999.



Inventors to Sponsor Editing Awards

The inventors of 'desktop publishing are to sponsor the 1989 British Association of industrial Editors 'Editing for Industry' Awards.

Computer Software experts Aldus UK, who develop, market and support computer software for business and creative professionals, will be associated with the BAIE in its 40th anniversary year.

The Editing for industry Awards, for those in the field of corporate journalism, design and communications, seek to recognise the very best in company editing, whether a staff newspaper, promotional magazine, company video, audio tape, or an annual report.

One of the highlights of the anniversary year will be the Association's convention, to be held in Jersey in May, during which the awards will be presented.

Aldus was founded in 1984 to develop a relatively inexpensive and easy to use software tool to perform page layout and design functions. The result was PageMaker, for which Aldus founder and president Paul Brainerd coined the term 'desktop publishing.' PageMaker has sold more than 200,000 copies to date and is available in eleven languages and more than 35 countries, and this magazine is produced by the use of PageMaker.

Aldus PageMaker User Group

With the full support of Aldus an organising committee has been established to set up an Aldus PageMaker User Group in the UK with the primary intention of providing a forum through which users of the product can share information relating to both the program itself and their individual use of it.

Initial assistance with the circulation of information to all registered users of the product and the trade channels is being provided by Aldus (UK) Limited, but the company will take no part in the running or control of the User Group once it is established.

The inaugural meeting of the User Group took place during February. It is intended that the User Group should publish a regular newsletter keeping members informed of product developments both from Aldus and other relevant sources. Meetings will be held some six times a year and an annual conference and exhibition is also envisaged.

Other planned benefits include a helpline service, discounts on special products from Aldus and other vendors as well as the opportunity for advance testing and consultation on new products.

Membership of the User Group is open to all users of Aldus PageMaker, whether individuals or corparate bodies, regardless of the form or type of computer on which they run the program.

Interested in Fractals?

Apple2000 have received the following letter:-

Dear Apple2000,

The subject of fractals has been generating interest to home computer users. I am considering starting a small newsletter Fractal Report containing articles on the subject. The articles will be about pratical programs for generating fractal images on specific home computers or on PCs, and also machine code routines for specific microprocessors. In addition relevant general interest articles will be considered, together with readers' letters. Ideally, articles should be submitted on A4 sheets "camera ready" for reproduction. However handwritten articles may be considered in exceptional circumstances.

An introductory flyer and the first edition will be issued free to anyone interested. Anyone that submits articles that are accepted for publication in the first issue will get the next five issues free of cost, if there is sufficient interest for the newsletter to continue. At the time of writing I have already had some high level interest, and if any of the people who have enquired actually send in articles the newsletter should be a good one.

I would be grateful if you could publish this letter in your journal so that anyone interested in receiving the first issue and/or contributing an article can write to me.

Sincerely,
John de Rivaz
West Towan House
Porthtowan
Truro
Cornwall
TR4 8AX

LaserPaint Color II

LaserPaint Color II provides a complete range of graphic capabilities which approach those of systems costing many times more than this product. LaserPaint provides the designer with most of the tools available in popular stand-alone drawing, painting and layout programs. Now colour photographs and transparancies can be scanned directly into LaserPaint Color II. An image in 8 bit, 24 bit or 32 bit format can be processed on the screen and then output to any PostScript printer, colour printers, film recorders or videotape. There is also facility for automatic 4-colour separations of continuous colour or spot colour.

LaserPaint Color II allows the user to import or export files in all popular Macintosh formats. It includes drivers for Sharp and Howtek colour scanners and the Howtek PixelMaster Colour printer.

Hardware support is provided for:-

RasterOps TrueColour boards.
Sharp Colour Scanners JX-450, JX-300.
Howtek ScanMaster, ScanMaster II, ScanMaster 35, ScanMaster 35 II.
Howtek PixelMaster- Colour printer.
Data Translation QuickCapture, ColourCapture - Frame Grabber.

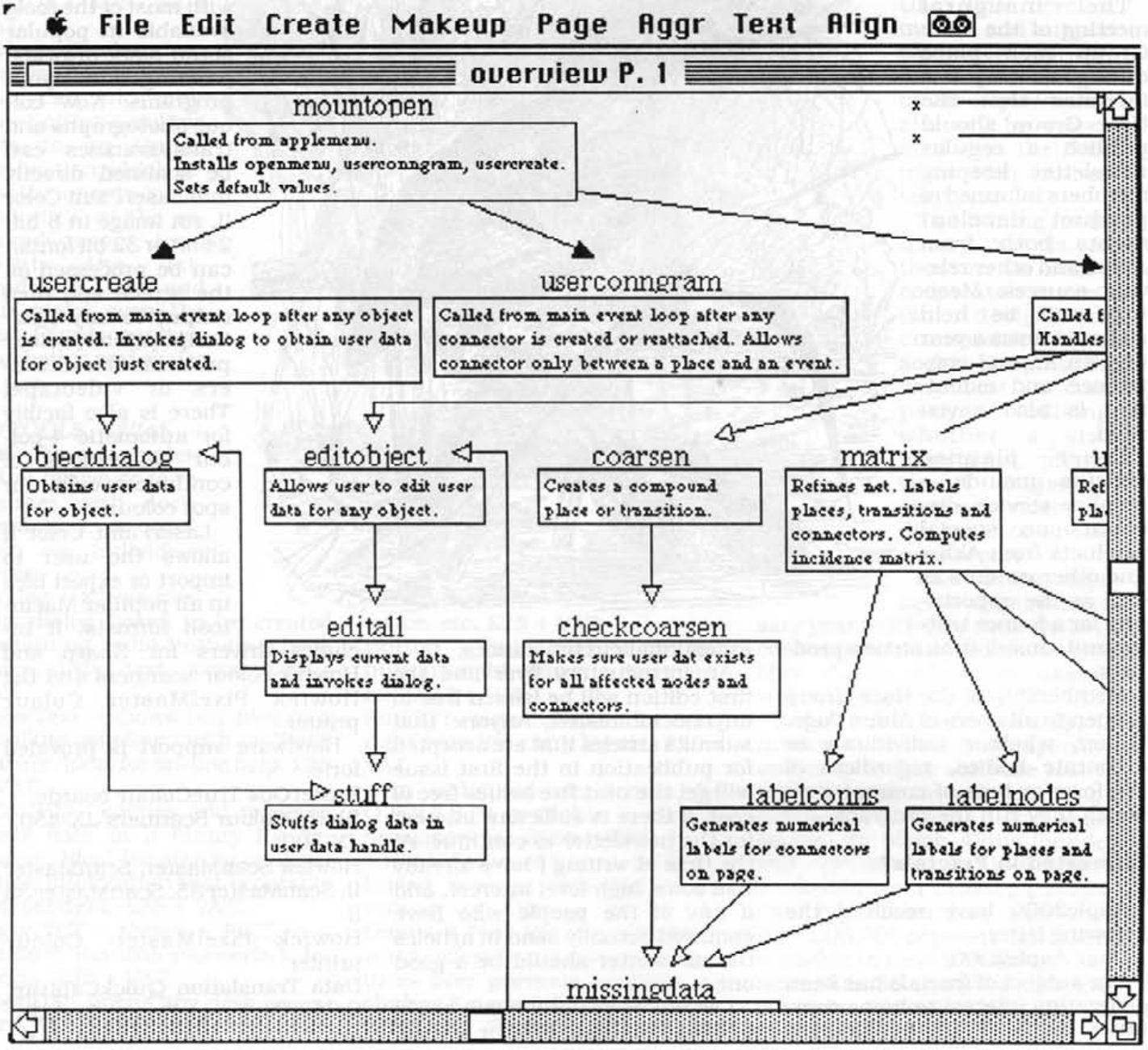
Design

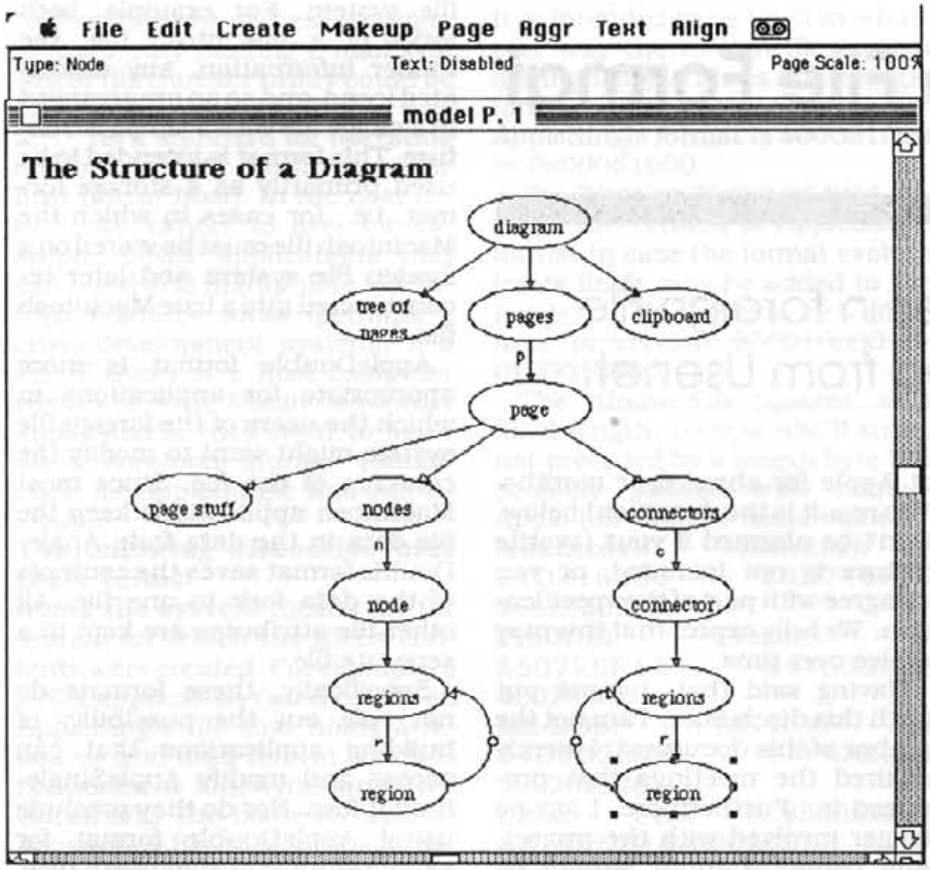
A review of this text handling and graphics program by Meta Software.

The purpose of Design is to help the user to visualize any complex system which requires graphic representation in order to best illustrate the concepts involved. It might be a flow chart or an organizational chart. An information network or a decision tree would also lend themselves to being displayed using Design.

Pages, nodes and connectors are the basic elements of a diagram created by Design. Each page of the diagram is displayed in a separate Macintosh window. A node is a graphic object such as a box, ellipse or circle, and a connector is a line which can be straight, segmented or curved, connecting two nodes. The nodes and connectors can have thick lines, fill patterns or other attributes.

There are some features of Design which make it easy to use for simple flow charts which only take up one page. If a node, which may be a box, triangle, or some other shape, is moved or altered in size or shape, then Design remembers the connectors and automatically redraws them. Also if any node is removed, the connectors attached to it are also





removed.

Text can be associated with nodes or connectors and is seen as an integral part of the diagram. The text uses all the fonts, styles and text sizes available on your Macintosh, and text can even be imported from other programs.

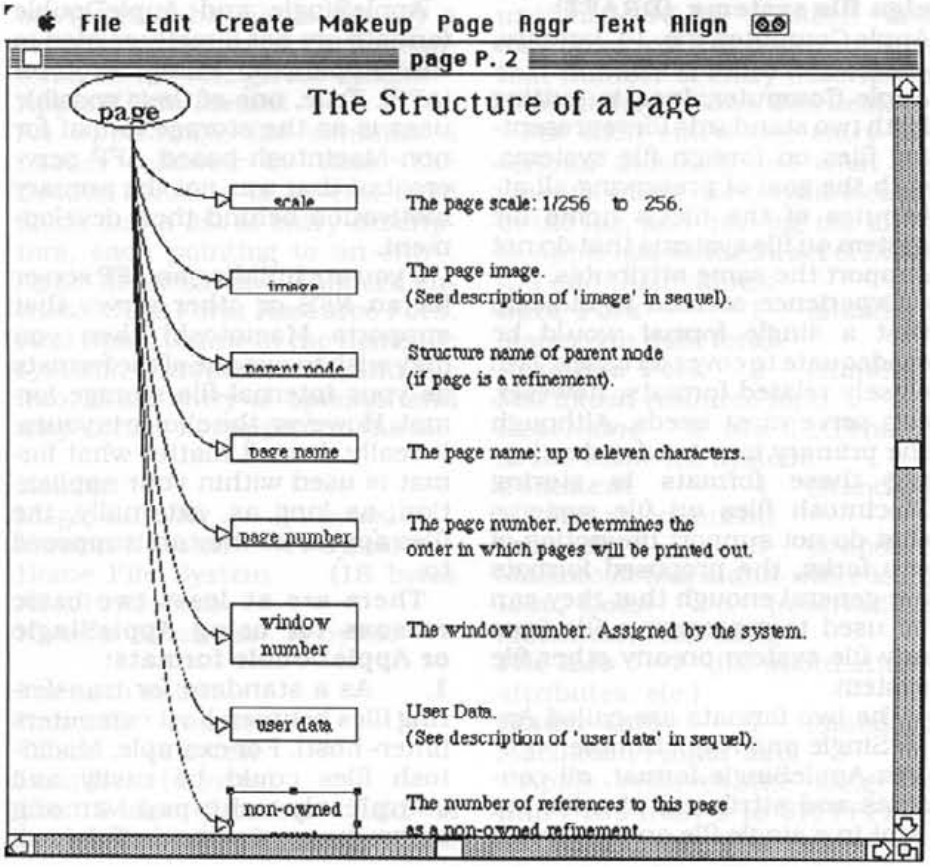
Design uses a system of hierarchies or levels so that pages can be created on the same level as each other or so they are related as parent and child. Design allows you to view the page structure, the way in which the pages relate to each other, however large the diagram becomes.

If you create a complicated one page diagram and suddenly realise that there is insufficient room for all the detail you require, then the 'coarsen' function allows you to create a 'child' page. Coarsening allows you to collect objects together and display them on another page but leaving behind a single node to indicate their position and represent them in the parent diagram. The user is also able to restore detail to the parent page if desired by using the 'refine' function, which is the opposite of the coarsen operation.

A useful feature is the 'Print Preview' option in the File Menu. This option gives you a window which shows how the current page would appear if it were printed on the selected size paper. What you see when you choose Print Preview is influenced by the choices last made in the Page Setup dialog, by the type of printer chosen and the current page size.

Design seems adequate to producing very neat flow charts where the graphics elements are fairly ordinary and it is able to handle the relationships between parent and child pages fairly well. It did not seem to lend itself to producing complex Pascal syntax diagrams as we had hoped it would as we gave up trying to produce the conventional curved Pascal flowlines.

The documentation is good and very clear and easy to understand. The Tutorial booklet does not take anything for granted except a basic knowledge of how to use the mouse.



info

Product : Design
Publisher :Meta Software Corp
Available from :
Meta Software Corp
150 Cambridge Park Dr
Cambridge
MA 02140, USA
Price (v2.0): $250

Value :
Performance :
Documentation :

AppleDouble File Format

Formats for Apple files in foreign file systems -downloaded from Usenet.

From: Dave Zuhn
Subject: What's the format of an AppleDouble resource file?

Jeff Stearns writes: "Apple has defined a "standard" way of storing Macintosh files on primitive UNIX-like computers which don't support the concept of resource forks. It's called AppleDouble, and it cleaves the Macintosh file into two parts for storage on UNIX. The data fork is stored byte-for-byte in one file, and the resource fork is stored in another. (The resource fork file is named "%file".) The %file is always 256 bytes larger than the resource fork of the Macintosh file istelf. There's a second standard called AppleSingle, which stores the two forks in one UNIX file, it apparently includes some header information necessary to separate the two forks later. Now the question: What's the exact format of those extra 256 bytes of an AppleDouble '%' resource file? And what is the format of an AppleSingle file?"

This was saved from the nets some months ago:

------- Cut Here -----

Below is a document produced by Apple and put forth as a proposed standard way of representing Macintosh and ProDOS (as well as other file systems') files on foreign file systems. What appears below is really still a draft, since the official version will be printed by Apple and distributed by the Apple Programmers and Developers Association. I'm sending it out now on the net to give it perhaps a wider distribution, and to give all of you some advance notice.

Some of you may recall that I asked for suggestions some time ago on this topic. I received numerous valuable responses, and a lively discussion took place at Apple for about four months. The result is the document below. Don't be alarmed if your favorite feature is not included, or you disagree with part of the specification. We fully expect that this may evolve over time.

Having said that, I must put forth this disclaimer: I am not the author of this document; I merely chaired the meetings that produced it. Furthermore, I am no longer involved with the project. Any technical input should be forwarded through Apple Technical Support, Cupertino. Thanks for all your support in the past. I hope this specification proves useful to you.

Formats for Apple files in foreign file systems (DRAFT)
Apple Computer, Inc. 14 January, 1988

Apple Computer, Inc., is putting forth two standards for representing files on foreign file systems, with the goal of preserving all attributes of the fileUs home file system on file systems that do not support the same attributes.

Experience seemed to indicate that a single format would be inadequate to cover all cases. Two closely related formats, however, can serve most needs. Although the primary impetus for developing these formats is storing Macintosh files on file systems that do not support the notion of two forks, the proposed formats are general enough that they can be used to represent a file from any file system on any other file system.

The two formats are called AppleSingle and AppleDouble.

In AppleSingle format, all contents and attributes of a file are kept in a single file on the foreign file system. For example, both forks of a Macintosh file, the Finder information, any associated icons, and so on are arranged in a single file with a simple structure. This format is intended to be used primarily as a storage format, i.e., for cases in which the Macintosh file must be stored on a foreign file system and later reconstructed into a true Macintosh file.

AppleDouble format is more appropriate for applications in which the users of the foreign file system might want to modify the contents of the file. Since most Macintosh applications keep the file data in the data fork, AppleDouble format saves the contents of the data fork in one file. All other file attributes are kept in a separate file.

Specifically, these formats do not rule out the possibility of building applications that can access and modify AppleSingle-format files. Nor do they preclude using AppleDouble format for simple storage of Macintosh files. We merely present them as alternatives.

The only assumption these formats make is that each file system on which these file formats will be supported allows the creation of a simple file: an uninterpreted stream of bytes.

AppleSingle and AppleDouble formats are not directly related to the AppleTalk Filing Protocol (AFP). True, one of their possible uses is as the storage format for non-Macintosh-based AFP servers, but that was not the primary motivation behind their development.

If you are building an AFP server (or an NFS or other server that supports Macintosh) then you may wish to use one of the formats as your internal file storage format. However, the choice is yours. It really doesn't matter what format is used within your application, as long as, externally, the files appear as they are supposed to.

There are at least two basic reasons for using AppleSingle or AppleDouble formats:

1. As a standard for transferring files between host computers (inter- host). For example, Macintosh files could be easily and completely shipped among heterogeneous systems if they all

understand one of these common formats. Any existing e-mail system or file transfer utility could be used without modification.

2. As a standard for operating on foreign files within a single host (intra- host). In the near future, we expect to see, for example, UNIX applications that can build and manipulate Macintosh resource forks (perhaps a cross-development system). If a set of users of a host computer wishes to write Macintosh-aware applications, they need to agree on a common storage format, such as AppleSingle and AppleDouble.

The following discussion uses these terms:

home file system means the file system for which the fileUs contents were created. For example, a UNIX application could create an AppleSingle file that holds a resource and data fork in which is contained a MacWrite-formatted document. The home file system for such a file is Macintosh, because the file is intended to be compatible with a Macintosh application. In most cases, where a file is created and used on the same file system, the home file system is that system.

foreign file system means the other file system which will store or process the file. An AppleSingle or AppleDouble file is usually a representation of a fileUs contents on the foreign file system.

AppleSingle format

An AppleSingle file contains a header followed by data. The header consists of several fixed fields and a list of entry descriptors, each pointing to an entry. Apple defines these standard entries: Data Fork, Resource Fork, Real Name (name in the home file system), Comment, Icon, and File Info. Each entry is optional and may or may not appear in the file.

Header:
Magic Number (4 bytes)
Version Number (4 bytes)
Home File System (16 bytes ASCII encoded)
Number of entries (2 bytes)

For each entry:
Entry ID (4 bytes)
Offset (4 bytes)
Length (4 bytes)

The "Magic Number" field is modeled after the feature in UNIX. It is intended to be used in whatever way the foreign file system distinguishes a file as AppleSingle format. The Magic Number for AppleSingle format is $00051600 or 0x00051600.

The "Version Number" field denotes the version of AppleSingle format in case the format evolves (more fields may be added to the header). The version described here is version $00010000 or 0x00010000.

The "Home File System" is a fixed-length, 16-byte ASCII string not preceded by a length byte but possibly padded with blanks. Apple has defined these values:

Macintosh: 'Macintosh' or $4D616369 $6E746F73 $68202020...
ProDOS: 'ProDOS' or $50726F44 $4F532020 $20202020...
MS-DOS: 'MS-DOS' or $4D532D44 $4F532020 $20202020...
Unix: 'Unix' or $556E6978 $20202020 $20202020...
VAX/VMS 'VAX VMS' or $56415820 $564D5320 $20202020...

Apple welcomes suggestions for other file systems that should be included in this list.

The "Number of entries" field tells how many different entries are included in the file. It is an unsigned 16-bit number, and may be zero. If it is non-zero, then that number of entry descriptors immediately follows this field.

For each entry, the entry descriptor indicates just what the entry is, where the entry is located in the file, and how big the entry is. Apple has defined a set of Entry IDs and their values:

Data Fork 1 (standard Macintosh data fork)
Resource Fork 2 (standard Macintosh resource fork)
Real Name 3 (the fileUs name in the home file system)
Comment 4 (standard Macintosh comment)
Icon, B&W 5 (standard Macintosh black-and-white icon)
Icon, Color 6 (reserved for Macintosh color icon)
File Info 7 (file information - attributes, etc.)
Finder Info 9 (standard Macintosh Finder Info)

Apple reserves the range of Entry IDs from 0 to $7FFFFFFF for future use. The rest of the range is available for other systems to define their own entries. Apple will not arbitrate the use of the rest of the range.

Icon entries will probably not appear in most files since they are typically stored as a bundle in the application file's resource fork.

The File Info entry is different for each home file system. For Macintosh HFS, the entry is 16 bytes long and consists of three long integer dates (Create Date, Last Mod Date, and Last Backup Date) and a long integer containing 32 boolean flags. Using the bit numbering scheme where bit 0 is the least significant bit and 31 is the most significant, bit 0 of the Macintosh Finder Info entry is the Locked bit; bit 1 is the Protected bit. Formats for MS-DOS, Unix, and ProDOS are shown below.

Macintosh File Info

```
+-------------------+
|                   |
|    Create date    |
|                   |
+-------------------+
|                   |
|   Modification date   |
|                   |
+-------------------+
|                   |
|   Last Backup date    |
|                   |
+-------------------+
|                   |
|    Attributes     |
|                   |
+-------------------+
```

Macintosh Attributes

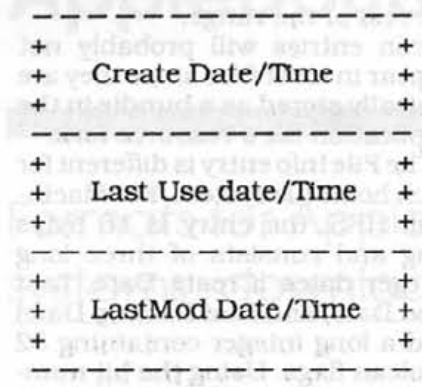
```
+-----------------+
| 0 0 0 0 0 0 0 0 |
| 0 0 0 0 0 0 0 0 |
| 0 0 0 0 0 0 0 0 |
| 0 0 0 0 0 0 P L |
+-----------------+
```

P = Protected
L = Locked

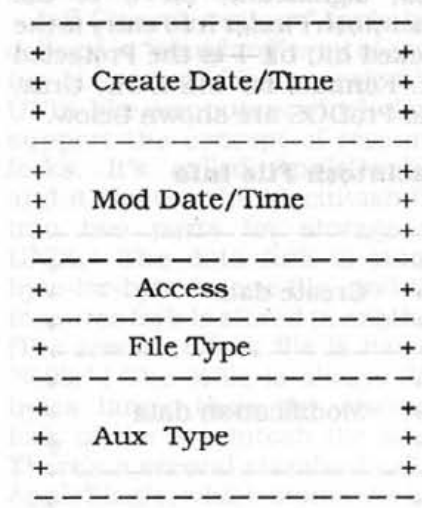
MS-DOS File Info

```
+-------------------+
|                   |
|   Modification date   |
|                   |
+-------------------+
|                   |
|    Attributes     |
|                   |
+-------------------+
```

Unix File Info



ProDOS File Info



(Each small box is two bytes; large boxes are four.)

The Finder Info field consists of 16 bytes of Finder Info followed by 16 bytes of extended Finder Info (the fields ioFlFndrInfo followed by ioFlXFndrInfo, as returned by the Macintosh PBGetCatInfo call described in Inside Macintosh, page IV-155). The internal structures (subfields) of ioFlFndrInfo and ioFlXFndrInfo are described in Inside Macintosh, page IV-183. Newly created files have zeroes in all Finder Info subfields. If you are creating an AppleSingle or AppleDouble file whose Home File System is Macintosh, you may zero any subfield whose value is unknown (indeed, most subfields are undefined if the file does not reside on a valid HFS volume), but you may want to set the fdType and fdCreator subfields.

The actual data representing the entry must be in a single contiguous block. It is pointed to by the offset field, which is an unsigned 32-bit number indicating the byte offset from the start of the file to the start of the entry. The entry length is also an unsigned 32-bit number representing the length in bytes. The length may be zero. After some number of entry descriptors, the actual entry data appears. The entries could appear in any order, but since the data fork is the entry that is most commonly extended, Apple strongly recommends that the data fork entry always be kept last in the file to facilitate its extension.

Apple also recommends that those entries that will most often need to be read, such as Finder Info, Real Name, and Dates, be kept as close as possible to the header to maximize the probability that a read of the first block or two of the file will retrieve these entries.

It is possible to have holes in the file (unused space between entries). To find where the holes are, you must take the list of entry descriptors and sort them into increasing offset order. If the offset field of an entry is greater that the offset plus length of the previous entry, then a hole exists between the entries. You can make use of such holes; for example, if a file's comment is 10 bytes long, you could create a hole of 190 bytes after the comment field to easily allow for the comment to later expand to its maximum length of 200 bytes. Because an AppleSingle file may contain holes, you must find each entry by getting its offset from its entry descriptor, not by assuming that it begins after the previous entry. Byte ordering in the file header fields will follow 68000 and 68020 conventions.

AppleDouble format

AppleDouble format is the same as AppleSingle format, except that the data fork is kept in a separate foreign file. The file containing the data fork is called the AppleDouble Data File, and the other file is called the AppleDouble Header File.

The AppleDouble Data File consists of just the standard Macintosh data fork, with no extra header at all. The AppleDouble Header File has exactly the same format as the AppleSingle file, except that it does not contain a data fork entry. The Magic Number of an AppleDouble Header File differs from that of an AppleSingle file so an application can tell whether or not it needs to look elsewhere for the data fork. The Magic Number for AppleDouble format is $00051607 or 0x00051607.

The entries in the Header File could appear in any order, but since the resource fork (in this case) is the entry that is most commonly extended, Apple strongly recommends that the resource fork entry always be kept last in the file. The data fork is easily extended, because it resides by itself in the AppleDouble Data File.

If it is possible on the foreign file system, one could create a new type of entry that "pointed" to the AppleDouble Data File to make it easy to find.

Filename conventions

AppleSingle format specifically does not include an algorithm for generating the AppleSingle filename from the fileUs real name. The foreign file systems of interest differ quite a bit in filename syntax, and the fileUs real name can be kept as an entry within the AppleSingle file.

The same is generally true for AppleDouble Data File names. However, Apple is proposing a standard for deriving the AppleDouble Data File and AppleDouble Header File names from the fileUs real name. Because filename syntax differs in the various file systems, the proposed standard varies by file system:

Unix:

To generate the AppleDouble Data File name, use character substitution to replace any illegal characters with an underscore (_). Since different Unix systems have different requirements on maximum file name length, do not explicitly truncate the name to a specific length. Instead allow the truncation to be done by the Unix functions create(), open(), etc.

To generate the AppleDouble Header File name, A/UX will prefix a single percent sign (%) to the AppleDouble Data File name. If necessary truncate the last character to keep the filename within the legal length range. Other Unix systems may prefix a directory name (AppleDouble/) to the Ap-

pleDouble Data File name to create the name of the AppleDouble Header File. In this scheme, all AppleDouble Header Files corresponding to AppleDouble Data files are kept together in a single subdirectory.

ProDOS:
To generate the AppleDouble Data File name, use character substitution or deletion to remove illegal characters, and use truncation if necessary to reduce the length of the name to two characters less than the maximum filename length.

To generate the AppleDouble Header File name, prefix the AppleDouble Data File name with the characters uppercase-R period (R.).

MS-DOS:
To generate the AppleDouble Data File name, use character substitution or deletion to remove illegal characters, and use truncation if necessary to reduce the length of the name to eight characters. Then add the MS- DOS extension that is most appropriate to the file (e.g., '.TXT' for a pure text file).

To generate the AppleDouble Header File name, add the extension '.ADF' (for AppleDouble File) to the eight-character filename.
AppleDouble name derivations will be defined for all other file systems of interest. This will allow applications running on the foreign file system (and human users as well) to see easily which files are AppleDouble pairs. Knowledgeable users, if they know the derivation, could rename or move the files so as to preserve the connection between the two. However, there is no guaranteed way to prevent one file of the pair from being inconsistently renamed, moved, or deleted.

– – – – – Cut Here – – – – – –

Hope this helped....I knew there was some reason I saved this file.

David D Zuhn
Computer Science System Consultant
University Of Minnesota

Another Mac Virus

The ANTI virus is different - it cannot be detected from additional resources.

This is some information on a new Macintosh virus. This article was originally posted on an American network by the author, then reposted on Delphi by Robert Wiggins, and then finally reposted on Infomac by Robert Hammen. The information was reposted at the request of the author, Thierry DeLettre.

New Macintosh Virus
Until now, all known Macintosh viruses could be easily detected by the additional resources they created. Now, it's over... There is at least one virus that creates no additional resource.

This virus is called ANTI, and infects only applications (and other files, ID=1 resource. It inserts a JSR at the beginning of the resource and all the virus code at the end. It seems to be very recent, but we have already found infected Macintoshes in Paris and Marseilles, and it is probably making its way fast across all Europe.

This virus is _not_ detected by VirusDetective or other utilities. It installs itself even when Vaccine is on. Vaccine beeps only if the 'Always compile MPW Inits' is _not_ checked. Virus Rx does not detect ANTI's presence in other files, but, when infected itself, changes its name to 'Throw me in the trash'. It doesn't seem to infect all applications, but only some (the ones with a CODE 1 resource called 'Main').

We haven't found how it works yet. It doesn't seem to change the System file, which doesn't contain a CODE resource. The contagion seems to be spread by the Finder. To see if an application is infected, you have to open its CODE ID=1 resource with ResEdit and search for the ASCII string 'ANTI'. You can also use the advanced features (resource fork search) of GOfer. We haven't yet found the way to remove it, but only a way to deactivate it by changing the first words of the virus code to a RTS.

There is a strange story about this virus. Two years ago, Apple France's developer's support manager, Alain Andrieux, wrote a utility for his own use called 'Stamp', with which he marked the programs he gave to developers. If a confidential program was given out, he could easily know where it came from. His program added a CODE resource to the marked files, but did _not_ change anything in the CODE 1 resource.

In January 89, a 'new' version of this program (Stamp 1.0b5) began to spread in the French Mac community. When run, this program installs the 'ANTI' virus into the marked or checked applications and/or into the Finder. These infected applications and Finders then become contagious themselves. It seems the virus author stole the source code of this program, changed it into a virus installer, then gave it away. Obviously, inserting a virus installer in an Apple program was done to damage Apple France's reputation...
Thierry DeLettre, Chief Mac Sysop, Calvacom .
P.S. A copy of the virus has been sent to Jeffrey Shulman and Robert Woodhead, so that they can update their anti-viruses consequently. .
P.P.S. I don't have access to other major American on-line services, so please upload the above information where you can.

Thierry can be reached via CompuServe at 76670,2260.

Diverse Databases

Mick Knapp transfers data between Appleworks and Filemaker, the two Claris database products

There is a horrible phrase which I nearly started to use in this article which has the potential to turn a devoted Apple II enthusiast into a sort of 20th century raging Viking. My wife starts to look aggressive when she hears anyone say "...upgrade to a Macintosh" because to her there is one product, Appleworks, which makes the AppleII the best computer ever invented, and I suspect many of you reading this will agree with her.

Appleworks is a superb piece of software because it combines great power and flexibility with intuitive ease of use. It is published by Apple's spin-off company Claris, and recently Claris made a strategic purchase of Nashoba Systems to get their hands on Filemaker Plus, a "database publishing" tool for the Macintosh. Filemaker is also a remarkable product, and we hope to review it in a coming issue. This article concentrates on the task of moving a database from the Appleworks environment into Filemaker.

Your first question must be "Why should anyone do this?". I don't want to go around in circles but my wife prefers Appleworks and I have got a Mac SE. We both wanted access to a 1500 record address database, and so I decided to copy her Appleworks database into my Filemaker system.

Using the 'create a report in labels format" in the Appleworks database module and the default setup as presented by Appleworks, pressing oa-p takes you to the print menu. I printed the file to disc as a text file. This can limit the file size but it is best not to deal with files over 150k. If your files are too big, split them by selecting a limited amount of the database using the oa-r command. My file was just small enough to fit onto a standard floppy.

The format of the file is shown in Table 1. The print to text file command puts a carriage return at the end of each field that it writes, and this will be used as the delimiter when the file is read into Filemaker.

Text File Format

Salutation
Title
Christian
Surname
Address1
Address2
Address3
Address4
Phone
Salutation
Title
Christian
Surname
Address1.....

Table 1

The next step is not necessary if you are fairly certain that none of the characters in the database are going to interfere with the file input routines of Filemaker. Page 227 of the Filemaker manual describes the three methods of copying data, and the most suitable for this transfer was the BASIC file format. This means that you must avoid quotes and commas in the input file.

Of course there were quotes and commas in my input file but I devised a simple method of removing them. Using Super Macroworks I wrote a macro on the fly which removed characters which may be interpreted by filemaker as file delimiters. If you need the characters to be reinstated later then replace them with an unusual character which does not exist in the file, ie. _ or @ for example. I saved the file on disc, again as a text file using the print to disc command.

I next set about transferring the flat file from the AppleII to the Mac. Using Gazelle on the II and Red Ryder on the Mac I set the baud rate to 9600/9600 in both communication packages(it's a joy to watch the data transfer at this speed). The two machines were linked from the serial modem port of the Mac to the Serial card fitted in slot 2 of the AppleII. I linked the serial ports with a cable connector which reverses the transmit and receive wires. These are connections 2 and 3 on a DB25 header. The way that I do this is to use a 'gender bender' with a single twist on the receive and transmit wires. You may have to interpret this for your own cable types.

It is not usually necessary to use any sort of error correction protocol when transferring directly machine to machine, but as the file was so long and my kids/dog/cat etc. were in attendance I used the Xmodem transfer capabilities of both Gazelle and Red Ryder. Gazelle was the host but does not run in host mode, and so I set Gazelle to upload the file but did not press the last carriage return in the send file sequence until Red Ryder was waiting for the file. This avoided any timeout errors as I charged upstairs and downstairs between machines.

Red Ryder 10.3 has some weird algorithms for working out the time left to transfer a file, but it does have a neat display which lets you go off and watch TV or something as long as you take an occasional glance to see how far the data-in bar has moved. At 9600 baud the transfer was very fast, and in less than 10 minutes a file existed on the Macintosh which was identical to the text file on the AppleII.

The next stage is to set up Filemaker to read in the text file (after you've put all those serial cables away first).

I opened a new blank file in Filemaker Plus and created new fields matching those which

existed in the Appleworks database. You can give these whatever name you like but you must ensure that there are the same number of fields in the Filemaker plus file as existed in the Appleworks database, and I maintained the order as the same as I used to print to the text file on the AppleII.

Using the 'input from' command to read the flat text file into the database, Filemaker gives you the the option to match the order of fields just in case you didn't define them in the same order as they came out of Appleworks. Select the commas format for the file by clicking the 'Basic' button. This is very important, as leaving Filemaker input set to the default Tabs input will lead to the type of file created making a separate record for every field defined. I selected the tranfered file as the file to be input and then sat back and waited as the fields were read into place. This can be time consuming and involves a large amount of disc access but there is a status display which reports continually on how many records have been read in.

If all has gone well then the next step is to check for any inconsistencies by dragging the scroll bar to view every 10th or 20th record. This may seem tedious but you don't really trust computers, do you? The file I read in was OK, but if errors have crept in then use McSink (available as Shareware on disk from the Macintosh Library and also from the TABBS bulletin board) to open up the text file and inspect it. Make any required changes (a few quotes or commas can can go awry which cause Filemaker to misplace a field position which ripples through the rest of the file) and save the file, close McSink and read in the file again.

Do not perform any sorting operations, but inspect the new records for consistency. Repeat this loop until all looks OK. As an alternative to deleting the records from the file and reading in the amended records, it is sometimes better to have empty copies of the schema and to open up new files. Filemaker allows up to eight files to be open at the same time, and when you have a correct and fully checked database all the duff ones can be trashed from the Filer.

So that's it! An Appleworks database of any size and complexity can be transfered into Filemaker Plus on the Macintosh fairly quickly and easily.

Software Used

Macintosh	
	Filemaker Plus
	Red Ryder 10.3
	McSink
Apple II	
	Appleworks 2.0
	Gazelle
	SuperMacroworks

Table 2

The Filofax Fallacy

Bill Pearce puts forward his theory of System Logical Analysis

Regular readers of APPLE2000 will be well aware of my views on the feasibility of AI. This problem cannot be resolved without a study of how the mind works, and that problem cannot be resolved without a study of how life works. In the resulting analysis, the issue of AI is a very minor one, though doubtless the businesses that are currently pouring millions of dollars into AI research would consider it rather important. An outline statement of my findings takes some 30 close-typed A4 pages. It may be that no-one will ever believe them: I remain convinced that they not only **can** be true but **must** be true. (The full theory shows that this is an invalid use of 'true', but let's get on with it!) My real motive in tapping out these notes is to confirm authorship of the theory.

The few points I am about to make are not intended to **prove** anything. Perhaps as well, seeing that nothing can ever be proved. (Did some wag say "Prove it!"?). The complete system, which I call S.L.A. - Systematic Logical Analysis - is simply a description of a workable system. It distinguishes between what we know for sure, which is surprisingly little, and what we **believe** we know but cannot possibly know - which category covers nearly everything.

Here is the position as briefly as I can describe it:-

1. The computer stores data. It stores the exact data.
2. The computer will manipulate that data with 100% accuracy. It will find what is there and do exactly what it is supposed to do with it.
3. The computer can find only the exact match. If you think otherwise, then I am afraid you must think again.
4. Neither the data nor the rules mean anything to the computer.

One simple and unbelievable proposition of S.L.A. is that none of these statements is true of the mind.

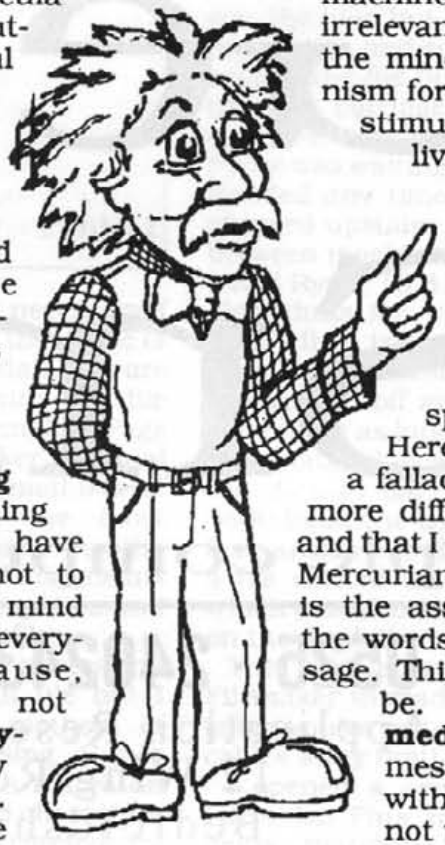
1. The mind does not and cannot store any data.
2. Consequently it will handle data with great inaccuracy. It finds such aids as books, calculators and computers very useful to compensate for this shortcoming.
3. A further consequence is that the mind can recognise incredibly remote matches but is never certain of an exact match.
4. **Everything** means something to the mind. I have been careful not to say that the mind **understands** everything, because, sadly, it does not understand **anything**, it only believes it does. It looks for the simplest description and calls it understanding. I cannot therefore claim that S.L.A. is true, only that it is the simplest description that appears to fit the facts.

The complete theory examines all the implications of these statements. All the evidence of what we know indicates their probable truth. It is only things that we believe but cannot know which indicate otherwise. We believe we have a head full of stored information. Common sense tells us that we cannot possibly **know** that. At any one time, all that you know is what you are thinking at that moment.

S.L.A. not only follows the implications through logically, it also examines the reasons why we commit this monumental blunder, a blunder that I have labelled the **FILOFAX FALLACY**. S.L.A. identifies at least three fundamental fallacies.

Language and communication

Again I must be brief. Whether the living organism, and hence the mind, is a machine, is completely irrelevant. Let us say the mind is a mechanism for responding to stimulus,(as is any living organism), and not a machine for storing information. One of its clever tricks is to respond to words. Here we encounter a fallacy that was far more difficult to detect and that I have called the Mercurian (sic) fallacy. It is the assumption that the words are the message. This they cannot be. They are the **medium** for the message. Our skill with language is not the capacity to **learn** meanings,



but the capacity to **invent** them. The evidence for and explanation of these views is rather lengthy. See what you can figure out for yourself. Consider the following. It is an impossibility to **learn** a language - to do that you would have to read another person's mind. Take all the time you need to figure that out. What you must do is try to **guess** what another person wants you to know. To assume otherwise is to assume that you already understand the language before learning it. Now look back to my earlier assertions. The point for AI to take to heart is this - interpretation of language is a never-ending guessing game. The object of the game is not to remember what you thought last time you saw a word, but to figure out what you are supposed to think this time. Any machine that plays this game must be as fallible as we are.

I do not wish to belittle AI languages. Any language will do best what it is designed to do, and all languages are limited only by the routines they can access. The simplest way to give any language complete access to all the capabilities of a computer is to give it the ability to enter and run machine code. If I may refer back to the discussion of Alphapop, it is clear to me that the analysis of mind on which it is based is similar in many respects to my analysis. The main difference is that they see meaning in how words relate to one another, I see it only in how you relate to words. EOF.

MacWorld Expo

Dave and Irene Flaxman took an early holiday in San Francisco!

In January 1989, San Francisco again opened its g ates to thousands of Macintosh fans. The MacWorld Expo hit town, and it was impossible to find a decent hotel room if you hadn't booked in advance - not bad for a one-machine show!

This year, the Expo had outgrown the Moscone Centre, and Mitch Hall Associates had hired the Moscone Centre, Brooks Hall and Civic Auditorium for the event. These were at two quite separate locations, so there were frequent shuttle buses traveling between them. It worked well, but the atmosphere at Moscone was noticeably better than that at Brooks & Civic. The exhibitors had no choice of venue - they were simply allocated to whichever location had a stand available of the right size - and some were not too pleased with their location.

If a visitor really wanted to attend a seminar, but also wanted to visit all the exhibits, there was a potential transport problem. To try to solve this, most of the seminars were held in Brooks & Civic, with repeat showings (on video) at Moscone.

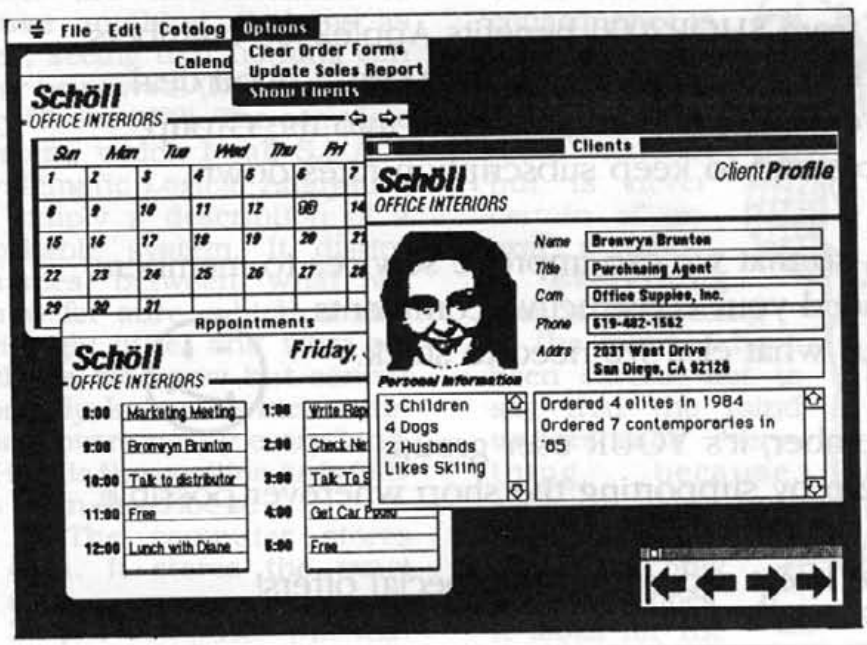
The Expo lasted for four days in all. Thursday 19th January was a special 'business day', by invitation only. The general public had access on Friday, Saturday and Sunday 20th/22nd January - but an entry fee was payable, then. The last day of the Expo was totally disrupted by the Superbowl finals - particularly as the home team (49ers) were playing in the final at Miami. Many of the exhibitors tuned their monitors in to catch the game, so you had to dodge around the spectators if you wanted to see the remainder of the exhibition.

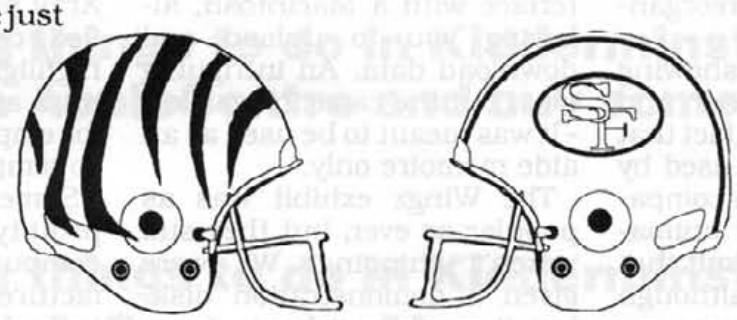
John Sculley's keynote speech was interesting - showing videos of past publicity campaigns, AGM's and other landmarks in the Apple history - all controlled by the Mac, of course. This took place at Brooks & Civic, and the auditorium was packed by an enthusiastic audience.

The main new product launched by Apple was, of course, the SE/30. The long-awaited laptop Mac was still not in evidence, but the laptop was alluded to as being a product to be announced in the not-too-distant future. We shall have to wait and see what is delivered.

Other announcements included Silicon Beach's introduction of SuperPaint 2 and SuperCard (see the screen dump, below-left). Jean-Louis Gassée was the guest speaker at their launch, to show that Apple endorsed this 'contender' to HyperCard. It certainly looked impressive, but was not available at that time. It is promised for later in the year, and TMC (The MacSerious Company) have confirmed that they will be distributing both products in the UK.

ShowNet balloons were seen all around the streets of San Francisco. These were advertising the network which had been set up, to connect all the exhibitors who had communications-related products on display. All such exhibitors were invited to join the network, and twenty accepted the invitation. They were not acquainted with each other, so it was quite an experiment! They were allowed access on Tuesday, and the show started on





SUPERBOWL 1989

Thursday - so there were just 48 hours to create the network. Hardware included IBM and Dec VAX mainframes; HP mini; Macintosh, NeXT, IBM and HP micros. Sites included the three halls, and remote locations in America, Canada and Australia. Within the 48 hours, they had the network running perfectly - pretty impressive, we thought!

Connectivity obviously continues to be a current topic, as many products were on display - such as terminal emulation software, multi-format disk drives, etc. The subject featured in many of the seminar topics, too - and they were well-attended, reflecting the growing importance of such facilities to the corporate market.

There were few new products which really caught our attention, although there were upgrades to many existing products. Most new products or upgrades were still being developed and were not ready for shipment.

One product that caught our eyes was called ModaCad. This is a suite of software programs for fashion designers. Two of the packages were being demonstrated, and I think I shall find it hard to do them justice in this article. The first program we saw was used to design the printed paper patterns used by dressmakers - complete with automatic 'sizing' to adapt the pieces for the different standard sizes, and generating the most economical layout for cutting out the materials. The second program we saw was really impressive - it allowed you to view what a finished garment would look like if cut from a certain material, you could even indicate how the material was to be cut so that different effects could be judged. The demonstrators included a tailor from London, who had formed part of the design team so that they could be sure that the programs performed the functions needed by people in the trade. We liked the programs, and we felt that the system could provide great savings in both time and money.

Another software product which we noticed with interest was for printed circuit board design. Again, a very impressive piece of software, simplifying (and speeding up) a tedious task. Douglas Electronics Inc., who were demonstrating the program did, in fact, create printed circuit boards for their customers - from the original drawings through to the finished product - if that were required.

Adobe Systems presented two new products, although they were not expected to be available for shipping until the end of March. One was the Collector's Edition II, which contains PostScript artwork based on typical backgrounds as used by architects and designers (e.g. brick, stone, slate). The other was called Streamliner - one step ahead of autotrace, this program converts bitmap images to postscript graphics by simply identifying the file which you wish to adapt. A new Illustrator '88 file is created, which can be opened as usual.

Altsys Corporation presented a new product called KeyMaster. This program will allow you to create PostScript fonts from images saved in EPS or Pict formats. This is ideal for incorporating company logos into a word-processing document, and is certainly easier than copying and pasting the images. Ansys are ditributing this, and the Altsys fonts, in the UK.

Kennect Technology's Rapport was an intriguing product which uses the external drive port to provide MS-DOS read/write/formatting facilities, and to allow increased storage capacity on 3.5" media - 1.2 Mbytes on standard (800k) disks, or 2.4 Mbytes on High Density diskettes.

Olduvai have upgraded many of their products, including Read-It! OCR (and the new packaging gives a more professional image). Their major new product was Multi-Clip - a new utility which gives users multiple, editable clipboards with various options

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for manipulating and reorganising data.

MacroMind were showing VideoWorks Professional, and they were proud of the fact that the program is being used by many of the television companies to produce their animation effects. I must admit that I like the program, although I've never used it - as a presentation tool, it is superb!

Many of the exhibitors used raffles or other contests to attract our attention - usually, it was necessary to sit through a demonstration of their products before you had the opportuntiy to win. Some of the presentations were quite entertaining, though - even if the sales staff were not particularly good actors!

Infosphere, Inc. were showing Liaison - which allows you to extend your Apple Talk network over LocalTalk and/or Ethernet. They were emphasising the fact that you could be relaxing at home, but still pick up that important data from the office. As I commented to one of their representatives, it gave them an ideal opportunity for comfort at the Expo - they were all walking around in silk pyjamas and slippers.

Aba Software were looking healthy, showing Graphist-Paint II. Appearances can be deceptive, though, because they have just announced that the company is closing down as the investors are pulling out their support. Two of the employees have set up a new company, to continue support of existing products.

One gadget which attracted a great deal of interest was a Seiko watch which would interface with a Macintosh, allowing you to upload and download data. An intriguing idea, but the capacity was low - it was meant to be used as an aide memoire only.

The Wingz exhibit was as popular as ever, but they still weren't shipping! We were given a demonstration disk, but it would not boot, so we still haven't had an opportunity to try it out. We hope that the full product, when it finally ships, will be more reliable.

As usual, we met some of the UK distributors at the Expo, looking for new products to import - but keeping their 'finds' secret! We'll just have to wait and see what materialises. Many of the UK publications were there in force, too - maybe that's why their advertising rates are so high?

It was interesting to see 1-Mbyte SIMMS on sale for less than $200 - especially when you consider that prices seem to keep rising in this country!

After the Expo, we spent the remainder of our holiday touring around California and Arizona. While there, we were invited to attend two meetings which were of interest to Mac fans. The first was at University of California Irvine Hospital, where two doctors were demonstrating their prototype systems for the storage of Xray images, their retrieval and manipulation. We didn't understand the medical terminology, but it was fascinating to see the effective use of the Mac in this manner. Sections of the Xray picture could be magnified, colour could be used to highlight problem areas, arrows and text could be added for emphasis - and it all looked so simple.

Some of the cards used were prototypes by well-known computer peripheral manufacturers. Storage media attached to the MacII included the first read/write CD drive we had seen.

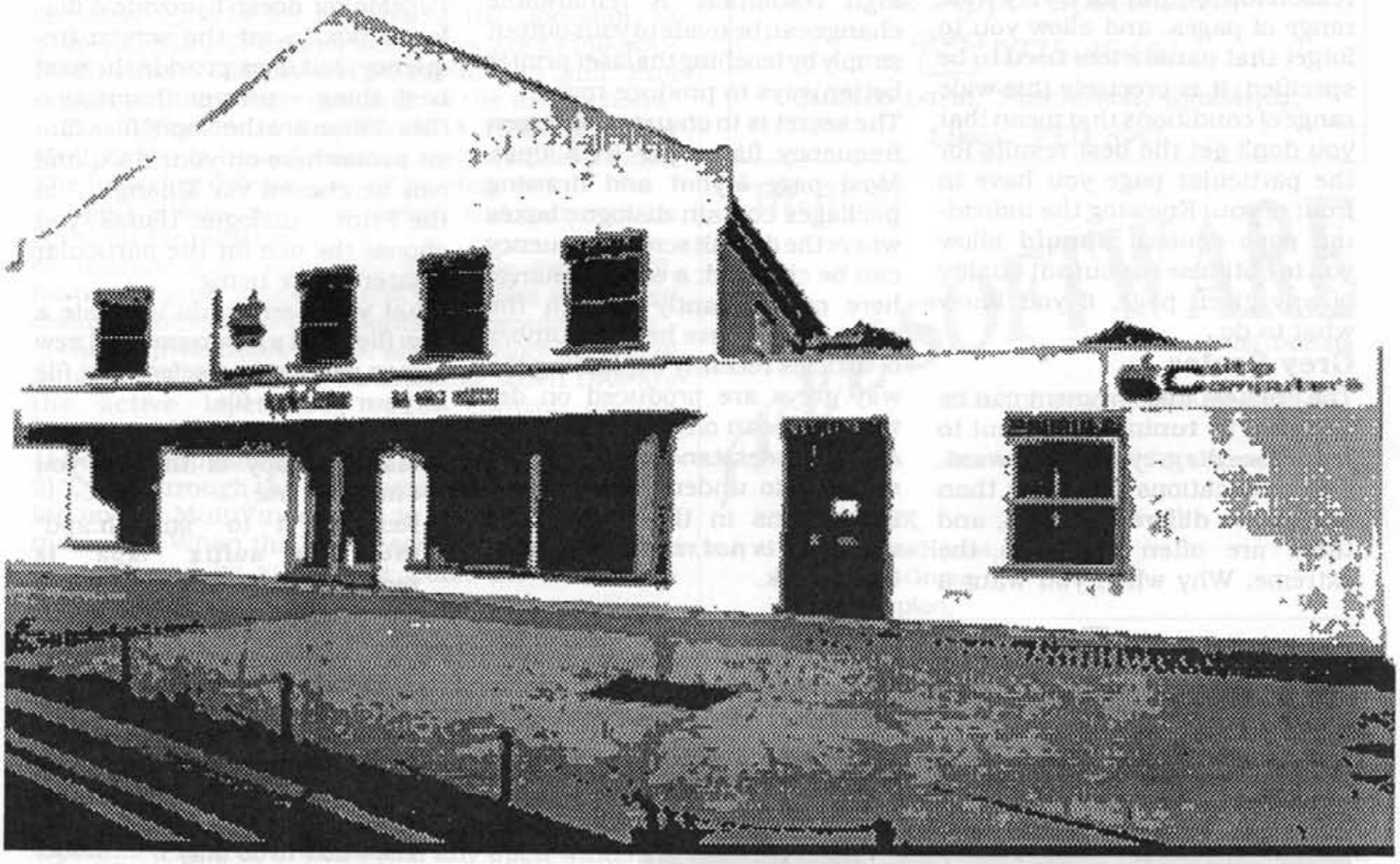
The second invitation was to attend a meeting of the Los Angeles Macintosh User Group. The lecture theatre was capable of holding 400-500 people, and it was fairly full. They are ideally placed for local software houses to visit, of course, so that the meetings are always well-attended. It was good to see that Apple let the user Group copy and distribute the latest HyperCard updates. They could not understand why the British users have to pay such high prices for Apple products and third-party software.

After the excitement of all the Mac- related events, I had to find some IBM dealers to advise me on the relative merits of the alternative spreadsheet packages available on PC's. Unfortunately, I don't have the opportunity to use Macs at work!

I was disappointed, as we visited many computer outlets in several towns, but it was apparent that there is a shortage of trained staff (or should I say a shortage of product knowledge?). Free seminars were held in many shops, showing different software on different days - both IBM and Apple. We sat in on a few, but found that we had to help out, so we weren't very impressed - it seems that salesmen have the same attitude, throughout the world. We asked the dealers which machines sold better - always, IBM. We also asked them which they chose to use within their business - always, Macintosh!

Interesting things to do in Kidderminster Part 1.
Go to the AppleCentre and buy some Apples.

Interesting things to do in Kidderminster Part 2.
Go to the AppleCentre and buy some more Apples.



Celtip Computers : AppleCentre

Lower Mill Street, Kidderminster, Worcs., DY10 2JG Telephone (0562) 822222

(Mind you! Have you ever been to Stourport?)

Smooth Those Greys

Roger Long suggests a simple way to improve laser quality

Hands up everyone who uses a laser printer. Hands down all those that get smooth greys.

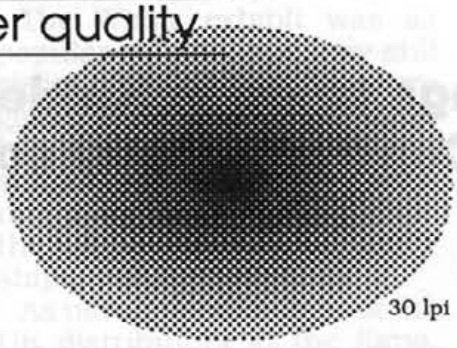
An increasing number of publications are being reproduced direct from laser printer output. For many publications this output is perfectly adequate. Rarely, however, is the laser printer used to its best capabilities.

Defaults

Most (if not all) software packages use default parameters unless given definite instructions to the contrary. These defaults allow reasonable output for a very wide range of pages, and allow you to forget that parameters need to be specified. It is precisely this wide range of conditions that mean that you don't get the best results for the particular page you have in front of you. Knowing the individual page content ***should*** allow you to optimise the output quality of any given page, if you know what to do.

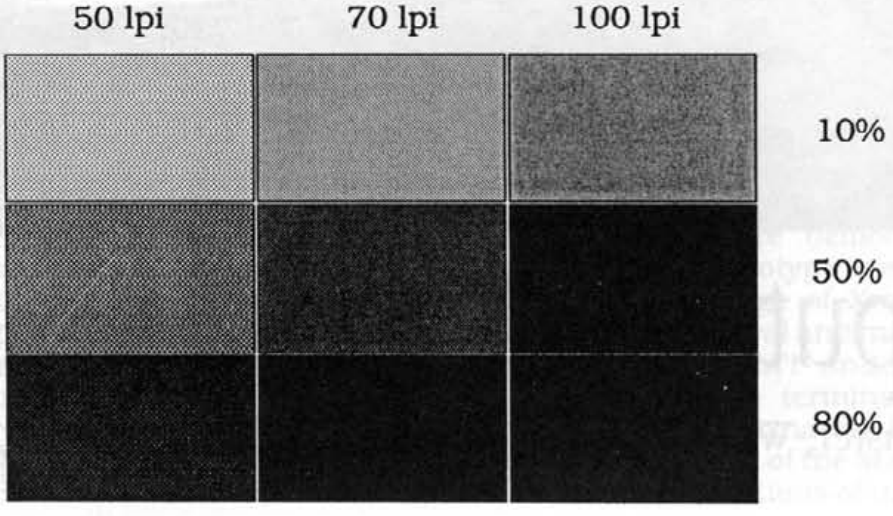
Grey Scales

The greatest improvement can be achieved by tuning the output to reproduce the greys that you want. Few publications use more than one or two different shades, and these are often 'dotty' in the extreme. Why when you want a



50% grey doesn't the laser printer choose to blacken each alternate dot? The answer is that you haven't asked it to, so it uses default values which were created to produce a wide range of tones at reasonable resolution, not your single tone at high resolution. A remarkable change can be made to your output simply by teaching the laser printer better ways to produce tones.

The secret is to change the screen frequency (lines per inch (lpi)). Most page layout and drawing packages contain dialogue boxes where the default screen frequency can be changed; a simple change here can instantly smooth the greys. There have been a number of articles recently explaining the way greys are produced on devices that can only produce dots. A full understanding of this is required to understand why the suggestions in this article will work, but is ***not*** required to make them work.



Screen Values

There are only three things to remember when dealing with screen values:

1. The finer the screen (larger the value), the fewer contrasting shades of grey are available.
2. The finer the screen, the smoother the tone.
3. For general work not involving too great a range of greys, use a screen of about 70 lpi (for a 300 dpi printer).

Rule 3 suffices for most work, but may need changing for specific items or effects eg:

1. If you want the smoothest possible tone, choose about 20% and a screen of 100 lpi.
2. For a page with a single pale or dark grey, choose 20% or 80% and a screen of 75 lpi.

Specifically for PageMaker® Users

PageMaker doesn't provide a dialogue box to set the screen frequency, but does provide the next best thing - printer description files. These are the ".apd" files that sit somewhere on your disk, and can be chosen via 'Change...' in the 'Print...' dialogue. Usually you choose the one for the particular printer you're using.

What you need to do is create a new file, with a new name and new screen values, and select that file as your printer file.

To do this:

1. Make a copy of the file you currently use.
2. Rename it to "smooth.apd" **(Note: the suffix ".apd" is required).**
3. Open it from within a text editor.
4. Find the Line:
   @ScreenFreq: ""
5. Insert your new screen value between the quotes
   eg @ScreenFreq: "70"
6. Save the file as TEXT only. (Consult your manual if you don't know how to do this)
7. Select it as the new printer description via 'Change...' in the 'Print...' dialogue.
8. Try it, and tune or create other files as necessary.

Intrigued by the other bits in the file? Maybe we'll get on to those one day...

StopWatchDA

By Roger Long and on this month's Mac Disk Update 6

StopWatchDA was created to satisfy my need for a simple timekeeping system. As a professional who often does work "by the hour" I needed a simple system for tracking how much time I'd spent on each job. Now I simply start the StopWatchDA and forget about it. It does most of the things you'd expect, and hopefully nothing else! I've tested it as extensively as I can (for someone without Xpress, Persuasion, Illustrator, RSG.....), but I don't of course take any responsibility for anything it might do.

StopWatchDA can be installed like any other Desk Accessory using the Font/DA mover and opened from the Apple menu. The StopWatchDA will immediately start - that this is the case will be seen from the 'moving apples' in the right of the menu bar. A new menu (labelled "StopWatch") will be appended to the right of the application's menu items. This menu contains options for controlling the operation of StopWatchDA. The menu selections are as follows:- Start, Pause, Display, Reset, About and Quit. Full details of their usage are given in the instructions.

The operation of StopWatchDA running under MultiFinder is broadly similar to that under Finder. The following differences will be observed.

a) Applications can be launched and quit with no effect on StopWatchDA.

b) 'Restart' and 'Shutdown' from the Finder will, however, cause StopWatchDA to present the 'Reset' dialogue, otherwise the information would be lost.

c)The StopWatchDA menu, and therefore control of StopWatchDA will only be available when DAs are the active layer. To regain control of the StopWatchDA either:

1) Select StopWatchDA from the Apple menu.

2) 'Cycle' through the applications running by clicking on the MultiFinder icon in the top-right of the menu bar. When the Desk Accessory layer is active (as indicated by a suitcase icon), the StopWatch menu should be available.

Problems can be experienced when an application builds a menu 'on-the-fly'. Occasionally this means that the StopWatch menu will be in a different place. Operation of the application should proceed normally.

The reason that I've implemented StopWatchDA without a window to control it (as would be preferable really), is that PageMaker® doesn't allow you to 'Open ...' a new document with any open windows. This includes DAs (and is a real drag when you have to close the Scrapbook, KeyCaps and the Calculator every time you want to change documents). With the StopWatchDA it meant writing down the time and restarting it. This was too much so I've managed to fool PageMaker into thinking I'm not there.

Version 2 will run as an INIT, and you won't need to remember to start it, it will have a file system interface. StopWatchDA is shareware.

Network News

The latest news, tips and gossip from the networks.

From: Bruce P. Halpern
Subject: **Exchanges Between Apple II and Mac using 3.5 disks**
The Apple II files should be in ASCII format. Apple File Exchange on the Mac will then be able to read the file (the Apple II disk should go into the internal drive, not the external drive) and convert it to a form the Microsoft Word 3.01 and Microsoft Works are able to use. I do this routinely with AppleWorks text files. If you have the Beagle Bros Timeout Powerpack desk accessory "AWP to TXT" available for AppleWorks, use it. It will eliminate the carriage return that AppleWorks otherwise appends to the end of each line when it prints an ASCII file to disk.
Apple File Exchange can also be used with ASCII format AppleWorks data base files (printed to disk in ASCII format using the normal data base routines). Such files, after translation by AFE, can be read by Microsoft Works as ASCII files, and then converted into Works files within Works.
Bruce P. Halpern
Psychology & Neurobiology & Behavior
Cornell

From: Alan Stein
Subject: **AFE and Works/Appleworks**
It is no longer necessary to save Appleworks files as ASCII files in order to transfer them to a Mac. The latest version of Microsoft Works contains a translator that will translate Appleworks files to Microsoft Works files. (Unfortunately, it doesn't seem to work the other way.)
Alan H. Stein
Department of Mathematics
The University of Connecticut at Waterbury

From: puatu@vlsi.jpl.nasa.gov
Subject: **Hyperscan Magic Button**
At the MacWorld Expo, Bill Atkinson demonstrated an undocumented feature in HyperScan called the "Magic Button." With it, the user can select a beginning window and an ending window and HyperScan would interpolate subsequent windows in a multiple scan. Unfortunately, I did not remember how he selected the two windows. Anyone Know?
Thanks.

From: Dave Platt
Subject: **Info-Mac Digest V7 #23**
> Is there any reason for partitioning a private SCSI disk, assuming I'm not interested in password protection or encryption of contents? Can it make the disk more robust in the face of misbehaving programs (can one enforce read-only partitions?) Or reduce fragmentation, or simplify backups?<
Yes to all of the above.
Partitioning a large hard disk into several smaller volumes will reduce the size of the smallest allocation block. On a 100-meg hard disk, files are allocated in chunks of (I think) 4k bytes each; if you have lots of relatively small files, this can add up to quite a bit of wasted space. If you partition the disk into subvolumes that are < 32 meg each, the allocation blocks become substantially smaller (down to 1k bytes, I think).
If you're planning on storing a large number of applications on a hard disk (f'rinstance, in a PD/shareware library), then the "Desktop" file for that disk will become very large; updating the file takes a long time, and if you _really_ stuff the disk full of files you can push the Desktop file past the maximum number of resources that the Resource Manager can support. If this happens, CRASH!
By splitting a disk into several partitions, and dividing your collection of applications across these partitions, you can keep the Desktop file size well clear of the point at which its performance begins to suffer.
If you use a volume backup utility such as DiskFit (i.e., one which is relatively unselective about what it backs up), you can simplify your backup task by keeping your active data files in a small partition that you back up frequently, your System and applications in another partition that you back up every so often, and your unchanging files (e.g. PD and shareware stuff) in yet another partition that you never back up, but simply restore from your PD/shareware floppies if you need to. The System/application and PD/shareware partitions will suffer very little fragmentation while in use, because their contents are not changed frequently. If the data partition becomes fragmented, it can be defragmented relatively quickly.
You can set up a small partition as a "hot lab" for testing new programs of uncertain behavior and possible danger. Build a minimal system environment in this partition using the Installer. When you want to test a new program, drag it over into this partition, command-shift-doubleclick on the Finder in this partition [which makes this partition your "startup volume"], then drag all of the other partitions into the trash (dismounting them). It's MUCH harder for a virus to spread into an unmounted partition (I know of none that are capable of doing so).
One can enforce read-only partitions. Jeff Shulman's freeware "DiskLock" desk accessory can set the "volume lock" bit on an HFS partition, thus preventing the creation of new files and the modification of existing ones. This isn't as secure as unmounting the partition or physically write-protecting or unplugging the disk, but it will stop most forms of accidental and willful modification.
I have a 100-meg disk in my Mac II, broken up into 3 partitions of about 32 megs each. It's a wonderful setup; I would not want to

go back to a nonpartitioned arrangement.

From: Sigurd Meldal
Subject: **Is partitioning useful for private disks?**
There are at least three reasons for partitioning a disk:
1. There is (I believe) on desktop file for each logical disk (i.e. partition). If your disk is unpartitioned, and you have a LOT of files (e.g. MacZap with all the patches, etc.), then updating the desktop file may take a significant amount of time. By sticking these files into a separate partition with little file-creation activity, you reduce the overhead when creating files on other partitions.
2. Disk fragmentation. As time goes by, your files tend to become fragmented - i.e. they are no longer stored contiguously on the physical medium. By partitioning the disk, you reduce the fragmentation, and thereby speed up accesses.
3. Backups. A number of backup programs deal only with disks, not folders. By partitioning your disk you may back up parts of your files as if the partition were a "real" disk. If you organize your partitions wisely, this may reduce the effort of backing up your volatile data significantly.
Sigurd Meldal

From: Sigurd Meldal
Subject: **Slow text in PowerPoint while in color mode**
I have the following problem:
I am running PowerPoint 2.0A on a MacII with SuitCase II, System 6.02 and a SuperMac color monitor (8 bitplanes).
When writing text in full color mode, text updating on the monitor is abysmally slow, it does not even pretend to try to keep up with my hunt-and-peck speed (THAT's slow!).
On the other hand, when I change to black and white mode, things move along breezingly, with monitor updates as fast as I can type arbitrary nonsense (which is pretty fast). This problem only occurs while using PowerPoint, other applications seem to behave well.
Any pointers to what causes the problem or (even better) how to avoid it without changing to B/W every time I use PowerPoint?
In appreciation of any help,
Sigurd Meldal

From: Sigurd Meldal
Subject: **Soft- and hardware for the visually impaired**
A blind student is enrolled at our department, and we would like to give him facilities for the efficient continuation of his studies. We would appreciate pointers to hard- and software enabling him to easily access and generate data stored in ascii form, in particular we are interested in output units that can be used to generate Braille.
A Macintosh platform is not a necessary prerequisite.
There are rumors to the effect that there exist versions of the LaserWriter that print thickly enough that Braille can be printed and read. I do not know whether this is an effect of the print engine of this laserwriter, or of some particular toner.
Responses to me will be summarized for the Info-Mac newsgroup.
Sigurd Meldal
Department of Informatics
Allegt. 55
N - 5007 Bergen
Norway

From: Sandro Corsi
Subject: **Info-Mac Digest V7 #26**
This is in reply to the request for help with Braille output. Well, it hadn't occurred to me before, but the printouts from our laser printer sure can give a lot of tactile feedback. Ours is an AST Turbolaser/PS, built around the Ricoh 4081 engine. We just use the standard toner recommended for this particular model. I understand that its unusually thick application of toner is due to the use of "write white" technology. Anyway, we bought it for its wonderfully deep solid blacks, but it might also be useful for its bas-relief-like qualities.
Sandro Corsi
Art Dept.
Univ. of Wisconsin - Oshkosh
Oshkosh, WI 54901

From: DIXON WALTER V
Subject: **MPW 3.0 & MacApp 2.0b5 problems**
Hello,
I just purchased MPW 3.0 and MacApp 2.0B5 updates for my system at home and exprienced a number of problems in installing this software and building the sample MacApp applications. None of these problems have been hard to fix (so far), but I was wondering if other people had similar experiences.
I believe that I have read and followed the installation instructions, but I don't rule out the possibility that I might have missed something. Listed below are the problems I have run into so far.
(1) The installer script immediately fails because it can't find a file.
(2) MacApp won't compile. One module has two functions which are not typed at all, and another module incorrectly (?) references an intermediate function value from within the function, ie.
FUNCTION foo(VAR x:integer): integer;
BEGIN foo := 1; IF (foo = 1) THEN ...
(3) The first two sample MacApp programs (calc and cards) fail to build because of problems in a ".r" file. (I haven't tracked down the cause of these errors, but I suspect that they will not be hard to find.
Most of the problems were with MacApp. Admittedly, this is beta software; however I don't think it unreasonable to insist that the software install without error and the sample programs build correctly. I expect that a vendor try his installation procedures before shipping them.
Please reply to me directly and I will summarize for the net. If other people have seen similar problems, I will forward a list to Apple as well.
Walt Dixon

From: Theodore Allan Morris
Subject: **Macs directly on Ethernet**
Greetings from the Bitnet side! Recent questions about the AppleTalk to Ethernet connectivity problem prompt me to comment about our project, where we will be connecting Mac II's directly to Ethernet with a MicroVAX II (and, potentially, other VAXes).
There sure seems to be a dearth of literature (and products!) for this style of connection. There are lots of products, obviously, for the AppleTalk to Ethernet world, since 1) That's been the only way to network Macs to other folks for so long and 2) only recently have we had Macs which could accept a direct Ethernet connection/adapter card. So, the AppleTalk to Ethernet market is pretty rich in hardware and software products, with more on the way, I'm sure.

Since the University of Cincinnati has a heavy investment in DECNet-linked VAXes, we want to basically run DECNet-or-something-like-it or something- compatibile-with-it on our "local" Ethernet. We also want to "bridge" over to the rest of the University's network, isolating traffic one either side except that which is specifically destined for a node across the bridge.
We hope that will keep general OA-type traffic on their side, our medical and patient-specific traffic on our side, and (if we get to it) potential encoded-video data on our side, so it doesn't compete with the OA/etc. traffic in the "big" network.
We are in the process of looking at products like Pacer/etc. and CommUnity, but would welcome comments/suggestions about other DECNet-like or DECNet-supporting protocols to run on our network, as well as comments about the bridging options we should entertain. Conversely, I will be glad to share with the net or with individuals information about our trials and tribulations. With that offer, let me bring this overly long msg. to a close :-). Thanks for your support.
Theodore Allan Morris

From: Emilio Calius
Subject: **Mac graphing**

I responded to the original query directly, but upon seeing Bret Ingerman's post in #30, I decided to post a copy of my message.
I disagree with Ingerman's recommendation of CricketGraph. It is a very frustrating program for serious users. In this category, the really good software is being produced by small outfits with smart algorithms. I encourage you to seek them out and not default to Cricket's bigger advertising budget. Although CricketGraph is what is (usually) on the dealer's shelves, the others are easily available by mail order. The authors often have small ads in MacWorld and/or MacUser. I f Rich Siegel sees this, maybe he would like to comment on the status of FzzPlot.
David Swager's question was ->First, I would like to obtain a graphing software package for the Macintosh. >
I am mainly interested in creating 2D x-y graphs.
1) Producing good, publication-quality plots regularly is harder than it looks.
2) I have not heard of any PD graphing packages. There is a shareware program called FzzPlot, but I don't know much about it. When I looked at it almost a year ago it was missing a couple of features that were essential to me. However, the author, Rich Siegel was constantly improving it, so it should be worth another look. Rich is on the net, but I don't recall his address.
3) The best graphing package that I know of is Kaleidagraph, or at least version 2. I spent 30-40 minutes talking to one of its developers and putting it through its paces at MacWorld Expo. It's due out in March I think. The current version is nice (and FAST!), but it doesn't let you mix line and scatter plots on the same graph. You can kludge it with a scatter plot by joining the points with lines and making the plot symbol invisible, but it annoys me. However, that's fixed in 2.0, and they have added a number of features that I like. They have always had a good upgrade policy (send them a disk and $10 to get the latest version), so I would recommend KaleidaGraph as your first choice. You should be able to get it for about $150 at a discount place.
4) A good alternate choice is Passage. That is what we use at present. The interface is a little idiosyncratic, and sometimes irritating, but it produces excellent quality graphs and is quite fast. If you need something right now, this is a good choice. We paid a little under $200.
5) Whatever you do, stay away from CricketGraph. I had to deal with it for a couple of years. It produces output that in general is far inferior to that of the two programs mentioned above, the dashed lines options are a joke if you have more than 10-20 data points, and it insists in redrawing the entire graph after even the smallest change (when you have a few hundred points, redrawing can easily take 15 minutes!!!). Enough said.
6) Some of the better spreadsheed packages have decent graphing functions. Trapeze in particular. WingZ (at least the demo version) isn't bad either. However, they are usually slower and lack important (to me) features when compared to specialized graphing programs. Excel, etc. are even more "business-graph" oriented than the above (N flavors of pie graphs)

I hope this information saves you a little frustration. Feel free to ask me any questions. And let me know if you find a program that I haven't mentioned here. I do a lot of graphs, so I would appreciate hearing about anything interesting that you dig up.
Emilio P. Calius
Structures & Composites Lab
Aeronautics & Astronautics
Stanford University

From: "ZZT"
Subject: **More Mac graphing**

I too have found Cricket Graph to have annoying limitations (inability to mix symbols and ordinary text, subscripts, superscripts, slow on a Mac II...). Recently, we purchased a new program called Igor from Wave metrics for a little (a very little) under $200 that may be useful for many people. Its main advantage seems to be for automatically producing plots of basically similar sets of data. Igor is basically a laboratory assitant that takes data (text files) and produces pretty good plots. It uses a standard Macintosh interface such as pull down menus etc., but in a slightly different manner.

Whenever you make a selection, rather than just executing your choice, a command is automatically entered in a small window, executed, and saved in a "history" window. The commands in the history window can be later move to a macro window and edited to create a procedure for use at some later time. In fact, you can set things up so that upon running Igor a data file is read in, the data curves are analyzed (scaling, Fourier Transform, fit to Lorentzian...), the data are plotted, and then printed. Although at first the user interface appears daunting, it is only slightly different; you can still do everything from dialogs and pull down menus. Appearently everything that the program can do, can be done either by standard menus and dialogs, or by commands.

The limitations in Igor that I have encountered are:
– selection of markers is too limited, and they cannot be easily sized – axis labels cannot be

positioned, and often appear too far away for me – error bars are possible, but not easy

Particular advantages of Igor are:
– can mix symbols, text, superscripts, and subscripts in text boxes – ability to save ALL features of a plot for use with another set of data – can AUTOMATICALLY process data (much of my data is fit to two gaussian curves) and automatically put results (mean, FWHM,...) into text boxes – ability to print two graphs on the same page, even on top of each other – can accept data, analysis, graphing, and printing commands from a single TEXT file. Thus your PDP-11 can take data and generate a file with EVERYTHING you need for a picture – doing mathematical operations on data is very easy, and there is plenty to choose from (even special functions such as bessel functions)
Igor is available from: Wave Metrics PO Box 2088 Lake Oswego, OR 97035 (503) 635-8849
Note, these opinions are mine, and are unconnected to Wave Metrics or my employer. I just use programs.
Jon Tischler

From: Paul Sutton
Subject: **Displaying Postscript**
Hello,
I have postscript files from various sources (Mac, IBM and hand-written) and would like to display them graphically on the screen.
Then I found out that Adobe Illustrator uses postscript to store its graphics displays, so wouldn't it be possible to read in an existing PS file, and it would display it graphically?
Unfortunately this doesn't seem to work. Looking at the AI files, they have a lot of prologue statements and from the manual, it seems that AI's description language isn't really postscript. Incidently, the PS files I have been trying to display print out perfectly on the laserwriter. I have tried various things like surrounding this PS with Adobe Illustrator prologue and trailers. I have read the PS section of the AI manual, and this seems to confirm that AI using a different version of PS to save its own files. My question is - it there a way of reading PS files into AI and displaying them? Or is there a utility (preferably PD) that converts normal PS into AI type PS? Or, going back to the original problem, is there any other way of displaying PS?
Thanks, Paul Sutton
Dept. of Electrical Engineering,
University of Bradford,
Bradford, West Yorkshire, BD7 1DP, UK

From: Jeffrey M White
Subject: **MacWeek's Mac user estimates**

Someone already responded about how Colgate's listed numbers (1000 Macs and 100%) were way off (I think the person said it was closer to 500 and 10%). I'd like to point out another that, that of Drexel University. The article (actually usenet posting) gave values of 1100 users and less than 50%. Slightly off. How about 10,000 Macs and 100% usage? Since 1983's freshman class, EVERY freshman has been required to purchase a Macintosh. In fact, Drexel was the FIRST college to require Mac's of all it's students. Therefore, considering how far off they were in just these two cases, I wouldn't put much belief in any of their other listings.
Jeff White
Univ of Penn - CETS

From: BPB
Subject: **Color Printing on Mac+**

After reading an article in the recent _Scientific American_ about the Mandelbrot set, I wanted to write my own version to examine the characteristics of the set. What I want to do is draw the area of the set I'm look- ing at on the screen (in patterns), but also have the option to print it in color (with IW2) without the patterns. Is that possible having the program draw in patterns but print in solid colors? Would I have to draw patterns to the screen, then when I print, redraw with colors? I also need some info about the printing techniques in a program. If someone has some Pascal source available showing the print Mgr calls, I'd appreciate receiving a copy.
Send any replies to: BPB9204@TAMVENUS (BITnet)
By the way, I'm writing it with these intentions on a Mac plus.

From: Bob Murrow
Subject: **Info-Mac Digest V7 #39**
Martin Ewing asked about mounting the MacII on its side and the impact on disk drive spindle bearings. He asked if someone can make a definitive statement.
I have a copy of the Quantum Q80S application manual and it specifically states that orientation in any axis is acceptable. I also called and talked to the V.P. of Engineering at Quantum about this. Mr. Shelton stated that this was the case but did reccomend that the drive be reformatted in the orientation it was to be used in. The Quantum is is standard drive used by Apple in the MacII. I also talked to a number of other people in the disk drive industry and they all felt that their mechanisms would work in any orientation as well. What I heard off the record is that all drives are tested in the normal orientation and all life test data is based on that. Hence some manufacturers put a disclaimer in their manual about mounting in any position other than horizontial/PCB down. In talking to drive designers it is clear that no technical reason exisits to restrict mounting of the devices. One thing did emerge and that is that since the vertical mounts are less stable the chance of inadvertantly kicking the machine and shocking the drive is much higher with a vertical mount some engineers recommended against it on that basis. In visiting three major drive makers I noticed MANY vertically mounted machines in each company even if they recommended against doing it.
Bob Murrow

Info-Mac digests consist of submissions by individuals on the academic computer networks. Submission and distribution of these digests is by network, moderated by volunteers at Stanford University.
Usenet is a loosely-coupled network of co-operating academic and commercial computer systems. It is a non-profit network whose primary aim is the sharing of technical information and the spreading of research results.
Delphi is a commercial timesharing and bulletin board system. The Delphi Digests are made available thanks to Jeffrey Shulman of Rutgers University.

Canvas 2.0

Elliot Bennett gives information on the features of Canvas 2.0.

A number of people have been curious about Canvas 2.0 (or at least what graphics packages are "out there") and I thought I would help out with my impressions of Canvas 2.0 now that I've had some time to play with it.

Very simply, Canvas is (in my opinion) simply the BEST (non-CAD) graphics package in ANY software market. In fact, read this review, and if anyone knows of something better ON ANY MACHINE, I'd like to know.

A "short" list of Canvas' features include:

General

• ABSOLUTELY the BEST user-interface I have ever seen on the Mac (and I studied user-interface design at Stanford [I could talk a LOT about this if anyone's interested]).

• Supports 16 million colours (using the colour wheel and/or saved sets of colour tables to set the current colour palette). It uses a great pop-up colour palette to access the colours. You can set fore- and background colours.

• Unlimited layers (memory permitting). Different layers can be saved to a separate file or printed (e.g., print layers 3, 8, and 23). Layers are easily reordered, hidden, or greyed (for tracing bitmaps, for example). Easy transfer of objects between layers.

• Tons of well placed and useful pop-up menus (as alternates to the pull-down/ heirarchical menus under the menu bar)

• Zoom in/out by up to 64 times using a brilliant pop-up menu, a magnifying glass, or the keyboard.

• Custom editable fill/pen patterns (patterned sets can be saved to disk. "Only" 60 or so patterns can be seen/used at once).

• Fill/Pen patterns can be a post-script gray scale (from 1-100% @1 deg. incr.).

• Tear-off rulers let you measure anything anywhere.

• Ruler zero-point reset.

• Ruler guides.

• Pen Modes (COPY, OR, BIC, XOR, and their compliments Not XOR, etc.)

• Pen sizes from 1 to 9 adjustable in both height and width.

• Custom pen sizes of anything you like down to 1/8 of a PIXEL width for hairlines (though 300 dpi laser printers can only print down to 1/4 of a pixel).

• Macros (of complicated objects saveable into sets).

• New Textedit (allows letters to be INDIVIDUALLY sized, coloured, styled, or 'font'ed.)

• 9 Feet x 9 Feet drawing space (and pages can be set to print with overlap for easy cutting and pasting). Not only that, but you can set the DIRECTION of printing the pages (i.e. horizontally or vertically). Ever wonder in MacDraw which page it considered #2 when you had 2 down and 2 across? Well, YOU set it in Canvas.

• Exports/Imports all the standards, including PICT (except it only imports MacDraw).

• On-line Hypercard-like help that tells you most of what you need to know.

• White text on black background (done by using the BIC pen mode w/black fill).

Object Mode

• Unlimited point Bezier curves. Well done (as in Illustrator).

• 3 standard types of EDITABLE arrow heads (with or without endlines).

• Auto-dimensioning (height, width, perimeter, and area) of objects.

• Splitting and glueing of polygons. Points are easily added or subtracted.

• Open ovals (for pie charts, etc).

• Scaling of objects

• Duplicate feature lets you set number of copies, angle of rotation, start/stop pattern fill and/or colour, x/y offsets, % inc/decrease in size, and more.

• Easily changed curvature of round-rectangles (ala MacDraft).

• Rotations at 1 degree increments.

• Use arrow keys (in conjuction with Command or Option) to move objects 1, 10, or 50 pixels at a time. Absolute must for accurate positioning (the numbers 10 and 50 are user-changeable to whatever you like).

Bitmap Mode

• Autotrace of bitmaps to polygons (this, like most autotracing, works so-so)

• Bitmaps up to 2540 dpi (I use 300 dpi for LW perfection).

• Full MacPaint tools that really are comparable to SuperPaint

• Flow rate control on Spraycan.

• When zoomed, a reduced view of object appears in upper corner.

• More, but I don't use this quite as often, so I'm not as familiar with it...

PLUS – –

• A LOT more (cropping, grids, multiple ruler scaling units...)

I could probably go on and on.

To be fair, it does have a couple of shortcomings. Like when you save a file, the icon is moved to a grid location in the finder (if it's not at one already) and the colour of the icon (on a Mac II [obviously]) is lost. Another minus is the inability to have "real" dashed lines (like in Cricket Draw). In addition, text is only single spaced (no double or 1.5- don't ask me why). And I would prefer floating palettes to having one in each window. But, hey, I can live with it...

So, if you're not using Canvas you've got to ask yourself why? (I've seen it for as little as $150 mail order). You can get a demo version from them for about $10 (I think). My FREE upgrade From 1.0 also came with a desk accessory version that they claim has about 70% of the program's capability (though on my 5 meg Mac II

under MF, I have little need of it :-).
I'd really enjoy hearing why people wouldn't use this package. Please note that my enthusiasm for this program comes from more than an impressive and long list of features. It's not just WHAT they put in the program, but HOW they implemented it. I, for one, am ready to go out and buy stock in Deneba...
Elliot Bennett
P.S. COMING REAL SOON! True dashed lines and WYSIWYG text wrapped around curves plus LOTS more. Details as they arrive...
Disclaimer: I am now a (highly biased) beta-tester for Canvas 2.0, so if anyone has any comments, please don't hesitate to tell me...

Apple Sues Apple

A lawsuit has been filed against Apple Computer, Inc. for marketing "music products." The lawsuit has been filed by the three surviving Beatles, Paul McCartney, George Harrison, and Ringo Starr together with Yoko Ono Lennon.
Apple Corps, the Beatles company, says that Apple Computer Inc. has broken a copyright agreement made secretly in 1981 when it promised not to use the trademark on musical products.
Since then Apple Computer has marketed CDROM equipment which can be used for music as well as for its more usual use in transferring large amounts of data into a computer and has also encouraged the linking of Apple computers to synthesizers by the use of MIDI connectors.

Macintosh Technical Note #189
Version Territory

Written by Darin Adler April 2, 1988
Modified by Andrew Shebanow August 1,1988
Modified by Andrew Shebanow October 1, 1988

This Technical Note describes the 'vers' resource supported by Finder 6.1 and later versions.

Changes since August 1, 1988: Updated **Version** to **VersRec** in the type definition.

Finder 6.1 introduces a feature which allows the creator of a file to identify the version of that file as well as the version of a set of files which includes that file. These version numbers are stored in 'vers' resources, and each contains a BCD form of the version number and a longer version message (which the Finder displays in the Get Info window for each file).

Apple's Version Numbering Scheme
We use a version numbering scheme for our software products which you might want to adopt. The following table summarizes the scheme, which involves three numbers, separated by periods:

Event	Version
first released version of the product	1.0
first revision	1.1
first bug fix to the first revision	1.1.1
first major revision or rewrite	2.0

Note that we increment the first number when we release a major revision, the second number when we release a minor revision, and the third number when we release a version which fixes bugs (we omit the third number if it is zero).

During product development, we use a version number followed by a suffix which indicates the stage of development. The following table shows a few examples:

Event	Version	Stage
first versions of the product	1.0d1, 1.0d2	development
product's features are defined—begin testing	1.0a1, 1.0a2 ...	alpha
product is stable—begin final testing	1.0b1, 1.0b2 ...	beta
first released version	1.0	release
first revision	1.1d1 ... 1.1	
first bug fix to the first revision	1.1.1d1 ... 1.1.1	
first major revision	2.0d1 ... 2.0	

Version Resources
Each 'vers' resource has the following format (described with a Rez template):

```
#include "SysTypes.r" /* for country codes */

type 'vers' {
    byte;           /* first part of version number
                       in BCD */
    byte;           /* second and third parts of
                       version number */
    byte development=0x20, alpha=0x40,
         beta=0x60, release=0x80;
    byte;           /* stage of non-release version
                       */
    integer Country; /* country code as in
                       international utilities */
    pstring;        /* short version number */
    pstring;        /* long version message */
};
```

The short version number is a string which only contains the version number, such as "1.0." The long version message can also include copyright notice, release date, or other information, but it should not include the name of the program. The following examples illustrate the proper use of the Rez template to create version resources:

```
resource 'vers' (1) {
    0x01, 0x00, release, 0x00, verUS,
    "1.0",
    "1.0 (US), ©1988 Inside Joke"
};
resource 'vers' (2) {
    0x12, 0x00, release, 0x00, verUS,
    "12.0",
    "Watt-R-Utilities Disk 12.0"
};

resource 'vers' (1) {
    0x23, 0x45, beta, 0x67, verFinland,
    "23.4.5b67",
    "23.4.5b67 (Finland), ©1988 Squid, Inc."
};
resource 'vers' (2) {
    0x55, 0x00, development, 0x67, verFinland,
    "55.0d67",
    "Friends of Skippy White 55.0d67"
};
```

The following is a type definition for 'vers' resources in MPW Pascal:

```
NumVersion = PACKED RECORD
    CASE INTEGER OF
     0:
```

```
    (majorRev: SignedByte;          {1st part of
                    version number in BCD}
     minorRev: 0..9;    {2nd part is 1 nibble
                    in BCD}
     bugFixRev: 0..9;   {3rd part is 1 nibble
                    in BCD}
     stage: SignedByte;          {stage code:
                    dev, alpha, beta, final}
     nonRelRev: SignedByte);     {revision
                level of non-released version}
    1:
     (version: LONGINT);         {to use all 4
                    fields at one time}
  END;

{ Numeric version part of 'vers' resource }
VersRecPtr = ^VersRec;
VersRecHndl = ^VersRecPtr;
VersRec = RECORD
  numericVersion: NumVersion;       {encoded
                                version number}
  countryCode: INTEGER;             {country
                    code from intl utilities}
  shortVersion: Str255;             {version
                number string - worst case}
  reserved: Str255;                 {longMessage
        string packed after shortVersion}
  END;
```

in MPW C:

```
struct NumVersion {
  unsigned char majorRev;       /*1st part of
                version number in BCD*/
  unsigned int minorRev : 4;    /*2nd part is 1
                nibble in BCD*/
  unsigned int bugFixRev : 4;   /*3rd part is 1
                nibble in BCD*/
  unsigned char stage;  /*stage code: dev,
                alpha, beta, final*/
  unsigned char nonRelRev;      /*revision
                level of non-released version*/
};

/* Numeric version part of 'vers' resource */
struct VersRec {
  NumVersion numericVersion;    /*encoded
                    version number*/
  short countryCode;    /*country code from
                    intl utilities*/
  Str255 shortVersion;  /*version
                number string - worst case*/
  Str255 reserved;      /*longMessage string
                packed after shortVersion*/
};

typedef VersRec *VersRecPtr, **VersRecHndl;
```

The longMessage string is not necessarily word-aligned due to the way the resource is layed out, so you should use _BlockMove to extract it from the record.

MPW Pascal:

```
VAR
  version: VersRecHandle;
  messagePtr: StringPtr;
  longMessage: Str255;
...

WITH version^^ DO
  BEGIN
  {calculate a pointer to the long message}
  messagePtr := StringPtr(Ord(@shortVersion)
        +Length(shortVersion)+1);
  {move the long message into a string}
  BlockMove(Ptr(messagePtr), @longMessage,
        Length(messagePtr^)+1);
  END;
```

in MPW C:

```
VersRecHandle version;
StringPtr messagePtr;
Str255 longMessage;

/* calculate a pointer to the long message */
messagePtr = (StringPtr) (((unsigned long)
    &(**version).shortVersion) +
        ((**version).shortVersion.length + 1));
/* copy the long message into a string */
BlockMove(messagePtr, &longMessage,
messagePtr->length+1);
```

A file can contain either one, two, or no 'vers' resources. A 'vers' (1) resource, if present, identifies the file version. A 'vers' (2) resource, if present, identifies the version (and name) of a set of files which includes that file, thus linking the files which make up the set. Apple uses this mechanism to identify System Software versions. All files on System Tools disks have a 'vers' (2) resource that identifies the version of System Tools with which they were released. In addition, each file as a 'vers' (1) resource that identifies the version of the particular file.

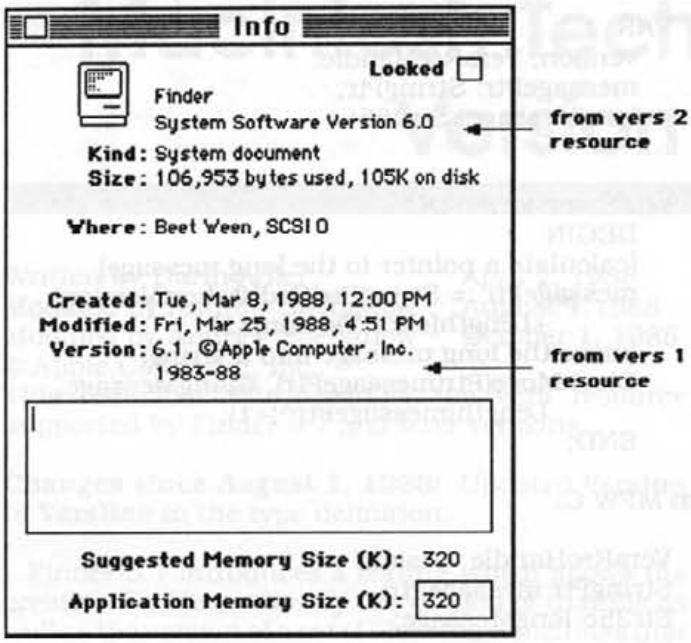
Version Resources and the Finder

The Finder displays the long message from 'vers' (1) and 'vers' (2) resources, if they are present, in a file's Get Info window; it ignores the rest of the 'vers' resource.

Here is an example of the 'vers' resources from Finder 6.1 with a Get Info window for the Finder file:

```
resource 'vers' (1) {
  0x06, 0x10, release, 0x00, verUS,
  "6.1",
  "6.1, ©Apple Computer, Inc. 1983-1988"
};
resource 'vers' (2) {
  0x06, 0x00, release, 0x00, verUS,
  "6.0",
  "System Software Version 6.0"
};
```

The other fields (besides the long message) are often useful to applications other than the Finder. The short version number is good for displaying the



version of a particular file, as the Finder does for the System and Finder in the About the Macintosh™ Finder window. The BCD version number is well suited for checking for a desired version number or comparing two versions. Note that this BCD numbering scheme represents a more recent version with a number greater than an older version, so a numeric comparison between two 4-byte values is all that is necessary to determine which value is the most recent.

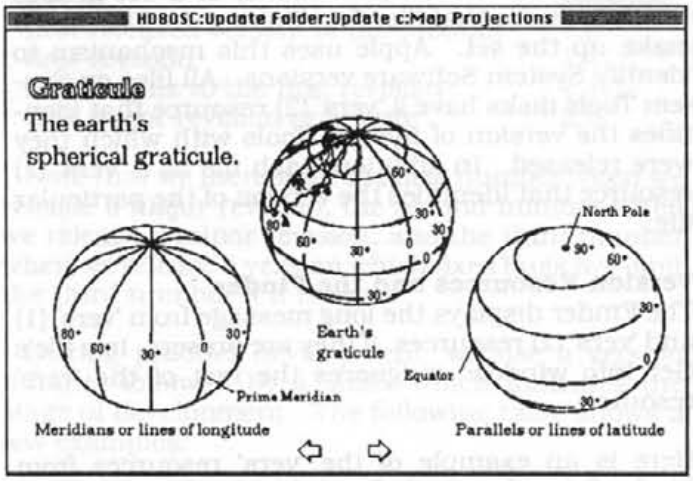
Final Note

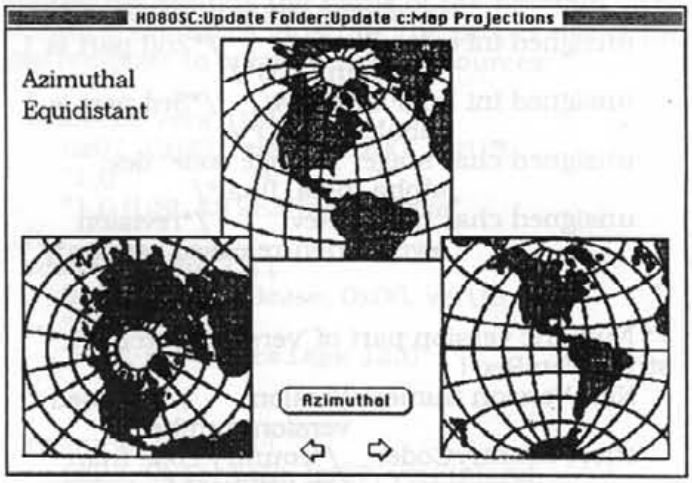
The Finder Interface chapter of *Inside Macintosh*, Volume III describes a resource (part of the bundle) that contains the version data of an application. This version data is typically a string that gives the name, version number, and date of the application. The Finder displays the version data (treating it as a string) in the Get Info window if there is no 'vers' (1) resource in the application. Unlike this version data in an application, any type of file can contain 'vers' resources, not just those files which contain bundles.

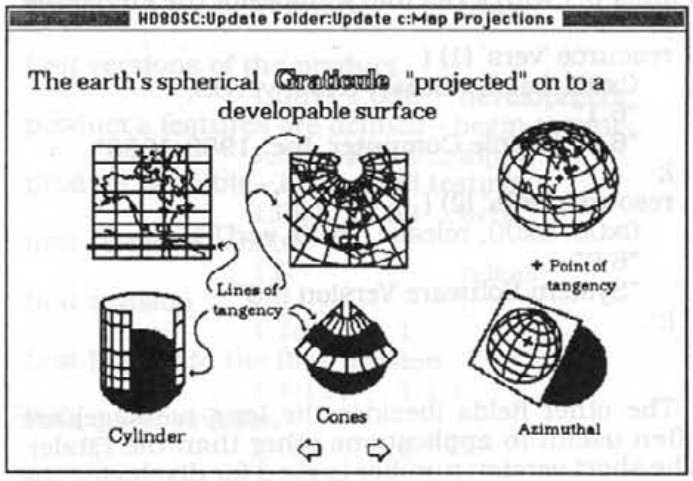
The Map Projections HyperCard Stack

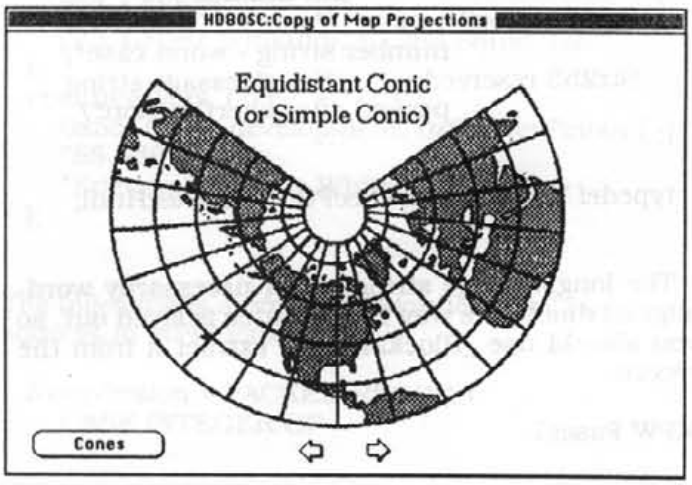
The Map Projections HyperCard Stack which is available on **MacLibrary Disk 907 Update 7**, was prepared by the United States Department of the Interior Geological Survey. It is a guide to commonly used map projections prepared for use in Hyper Card by Tau Rho Alpha, Joe F.Vigil, and Lauren Buchholz.

The purpose of this HyperCard guide is to illustrate a few of the common map projections that present thematic data. Examples of thematic maps produced by the U.S. Geological Survey since 1932 have been included.
The four screens below, selected from the stack at random, show the type of material available.









MACINTOSH

Keeping up:

Owning a Macintosh 512K, Plus or SE means you've been left behind by Apple's latest 68020 and 68030 based Macintosh's! With the new machines, prices on the lower range units have fallen (a Mac Plus now costs a mere £1355) therefore reducing the value of your existing Mac. So what's new?

Solution:

A new accelerator board, now available, can pull you out of the old Mac trap: the **GEMINI 020/030** accelerator is a single accelerator board which fits into the Mac 512K, Mac Plus or Mac SE, a *single* board which allows a choice of either 68020 or 68030; 68881 or 68882 co-processor running at 16 or 20MHz. This single accelerator board allows future upgrading without changing the board.

Memory:

The **GEMINI 020/030** allows the fitting of standard SIMM (SOJ or DIP), giving 1Mb or 4Mb of 32-bit RAM, the board may be set for zero, one or two wait states (relative to memory access time).

SCSI:

For Mac 512K and Mac Plus owners the **GEMINI 020/030** offers an optional *high speed SCSI* , the SCSI runs up to four times faster than the standard Mac Plus SCSI port.

Large screens:

With the **GEMINI 020/030** two models are available, a 17 inch 1024 X 808 mono (512K, Plus & SE) and a 21 inch 1280 X 960 mono (SE only).

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WordPerfect for the Mac

Geoff Wood reviews the long-awaited word processor, and compares it to Microsoft Word 3

WordPerfect is reputed to be the best selling word processor for the IBM PC and compatible micros. An Apple II version of WordPerfect emerged in 1987 and now there is one for the Macintosh. It offers many features, but how does it compare with the well established Word 3 and the ever popular MacWrite?

The short answer is that, if you have already learnt Word 3 and need more features, you might do better to upgrade to Word 4 than to buy WordPerfect. But if you have used WordPerfect on a different machine, or if you want to exchange WordPerfect files between MS-DOS and Mac, it may be a good buy.

If you use MacWrite but want more powerful features (such as multiple documents) you should look at MacWrite II before changing to a completely different program. There's some truth in the saying that the best word processing program is the one you have already learnt.

If you have not yet bought a word processing program, should you buy WordPerfect in preference to other programs? The answer to that question depends on your needs.

Different people have different needs. That's why there is no such thing as the perfect word processing program. Some people want mail merge, others don't. Some want to create tables and do calculations, others don't. Some need hyphenation, others don't. Technical writers want footnotes and numbered paragraphs. Scientists want special symbols and mathematical formula. Language students want accents and diphthongs. Authors want tables of contents and indexing.

But the more features you add, the more complex the program becomes and the longer it takes to learn. A good word processing program should be adaptable to suit your needs. Word 3 allows you to tailor the menus, change the defaults and set up Style sheets. WordPerfect lets you change some defaults and it also offers macros but you can't tailor the menus.

WordPerfect for the Mac is more compatible with its MS-DOS version than Word 3 for the Mac is with the Word 4 for MS-DOS. This is a mixed blessing. It's good for those who want to use both types of computer but it means that WordPerfect for the Mac has some unusual features compared to other Macintosh programs.

For example, the Enter key is not used as the near equivalent of the Return key but as a preliminary to other key depressions for cursor movement, etc. For compatibility with other versions of WordPerfect, the Macintosh version uses hidden codes (which can be displayed), but some of these codes were originally used for computers that could not display certain formats on the screen, so they are not really necessary on the Macintosh.

A full review of all of WordPerfect's features would fill a whole issue of this journal. This review covers the main features, more or less in alphabetical order. You can then make up your mind whether these features to suit your needs.

Calculations - WordPerfect for the Mac cannot do calculations, but the MS-DOS version does. Word 3 does simple calculations such as adding a column of figures.

Case Conversion - The Case Convert command converts selected text from upper to lower case and vice versa. When it converts to lower case, it retains the first person pronoun 'I' as a capital letter. If you include the full stop at the end of the previous sentence, it capitalises the first word of the selected sentence.

Centring Text - If you centre a heading with the Center command, when you press the Return key, the next line is left justified. But if you do it by clicking on the icon in the Ruler, when you press the Return key, the next line is centred. This distinction between centre *format* and centre *justify* can be useful but may confuse a novice.

It can also hide some text from view. When part of a line is formatted with the Line Center command, that part of the text is not displayed on the screen but it prints out on top of the text that follows it. The problem can be cured by deleting the Center codes but you may not be aware of its existence until you print the document.

WordPerfect can centre text vertically on a page. Instead of the text being printed near the top of the page, it is in the centre of the page with equal margins at the top and bottom. This is useful for a letter or memo which does not fill a whole page.

Character Formats - WordPerfect offers the usual character formats (bold, italic, underline, outline, shadow, subscript and superscript), any of which can be selected from the menus or by keyboard shortcuts (Shift-Command-B for Bold, etc). It also provides a fast way of changing the format by clicking on one or more small boxes at the foot of the screen labelled P B I U O S S_1 and S_1. When selected, the letter in the box changes to the appropriate format to show that the format is 'on'.

Redlining is a format used to mark text that the writer or an editor may or may not want to add to a document. A vertical bar appears at the left hand edge of any line containing such text. To include these words in the document you can switch off all the Redlining with one command or you can delete the codes for each occurrence.

The Strikeout format puts a horizontal line through the characters to indicate portions of the

text that could be deleted. If you decide to delete all these words in the document you can do so with one command or you can delete each occurrence.

The Overstrike format causes a character to printed on top of the previous one. In the normal screen display, the first character disappears, but the Print Preview mode shows one character on top of the other. In MS-DOS, this feature allows you to print accents with a daisy wheel printer but a Macintosh can do accents with the option key.

Codes - When you format characters, lines, paragraphs, pages or columns, the program inserts hidden codes where the formatting changes. They can be displayed in a Codes window in the lower third of the screen with the normal text in the upper window. There are over 70 different hidden codes. The multiplicity of codes can be confusing but at least you can see precisely what formats have been used.

When you click at the start of a line there may be a problem. If there is a hidden code at the start of the line, the insertion point may be to the left or right of a code (or between two codes). When you start to type, you may not get the effect you desire, e.g., plain text instead of bold. To move the insertion point to the left of the first code on the line, you must press the Enter key three times then press the left arrow key.

Columns - WordPerfect can print two or more columns and change the number of columns part way down a page. It can do snaking columns, where the text carries over from the bottom of one column to the top of the next, or side-by-side columns, where blocks of text in each column are aligned horizontally. The latter can be used for tables where some columns need more than one line of text.

Setting up columns is very easy. You can have evenly spaced columns (up to 24) or you can specify the width of each column and the space between the columns. You can view and edit two or more columns of text on the screen.

Cursor Position - If the cursor is on the screen, the status line shows the position of the cursor in terms of the page number and line number. If the cursor is not visible, the status line shows the page and line number of the bottom line of the screen. There is an option to also display the cursor position in terms of its vertical and horizontal distance from the top left hand corner of the page, even if the cursor is not visible on the screen.

Date and Time - The Date command inserts the date or time either as text which remains unchanged when you open the document on another day or as a function which will be updated on future days or times. The date is normally displayed as February, 14 1989 but you can opt for various other date styles. You can also specify time displays as 3.45 pm or 15:45.

End of Document - There is no visible indication of the end of the document. With Word 3, it's easy to see if there are blank lines after the last paragraph because it displays a short horizontal bar at the end of a document. With WordPerfect, you must test with the down arrow key or display the codes and look for Hard Returns.

File Management - The File Management command lets you perform 'desktop' operations from within the program. For example, you can create new folders and rename files and folders. You can open or delete a file, print a file without opening it, merge a file into an open document, look at the first screen of a file without opening it, open files in other formats (including Word 3) or copy a file to another file, folder or disc. You can also find a file containing a specified word or phrase.

The Retrieve command merges a file on disc into a file already open. (It has the same effect as one of the options in the File Management command.) The Append command adds a block of selected text to the end of a file on disc or to the end of the Clipboard.

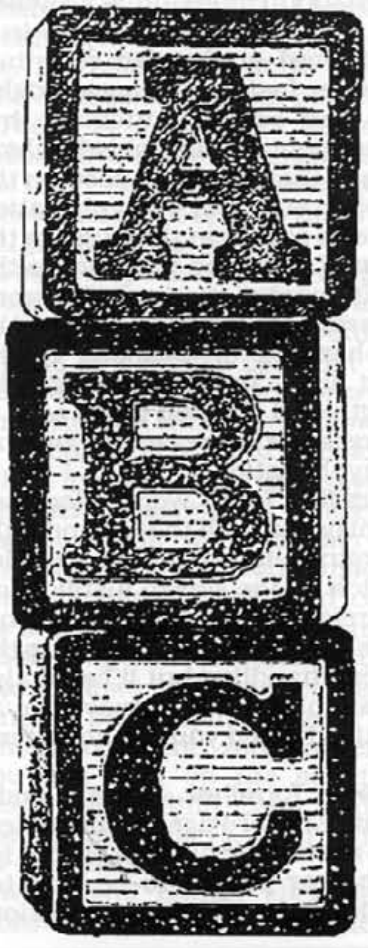
Font Sizes - In the Font menu, you select from the sizes 9, 10, 12,14, 18 and 24, but other sizes (up to 127 point) can be specified from the Character sub-menu.

Footnotes and Endnotes - You can have footnotes (on the same page as the reference number) and endnotes (at the end of the document), both in the same document. They are automatically numbered and re-numbered if you delete a note or insert another note. Footnotes can be preceded by a short line or a line across the page or no line. You can use reference marks such as * or † instead of numbers, specifying up to seven different marks to be used automatically in sequence.

The Footnotes command inserts a superscripted number at the cursor, then a full screen window appears in which you type the footnote. You can't see the footnote number in the main window as you type the footnote text. If you drag the footnote window down in order to see the main window, you will find that the main window has disappeared and can only be seen by closing the footnote window.

Formulae - You can type simple formulae by using the appropriate characters but WordPerfect cannot match the ability of Word 3 to do complex mathematical formulae.

Full Window - The Full Window command causes the window to fill the screen, thus hiding the menu bar and the vertical scroll bar so that you can see more lines of text and slightly longer lines. The menu bar reappears temporarily when you move the pointer to the top of the screen.



Goto - The Goto command can move the cursor to the start of a specified page or to any specified character such as a colon or full stop. It can also be used to move the cursor to the previous position or from one column to another.

Graphics - You can paste in a graphic via the Clipboard and change the size of the graphic by selecting it and dragging one of the three handles. Unlike Word 3, WordPerfect can only change the scale of the picture, not cut it, and it does not show the percentage reduction, so it is not easy to revert to the original size. WordPerfect does not have the equivalent of the Insert Graphic command in Word 3, nor can it convert text into graphics.

Headers and Footers - WordPerfect offers left and right headers and footers for facing pages. The header appears below the top margin with a blank line between the header and the first line; the footer appears above the bottom margin with a blank line between the footer and the bottom line. Thus headers and footers in WordPerfect affect page breaks whereas those in Word 3 do not.

Hyphenation - When the Hyphenation command is switched on, it puts a 'soft' hyphens in a long word at the end of a line, whether justified or ragged right. You can opt for Automatic hyphenation or Auto-aided (which means that you must position the hyphen yourself). A 'hyphenation zone' is shown in the Ruler in the form of a shaded band above the right margin marker. This zone determines whether a word will be hyphenated or wrapped to the next line. You can change the length and position of the zone to increase or decrease the amount of hyphenation.

Justified Text - WordPerfect can display text with the left and right margins aligned but you can also switch off the screen justification yet retain the format for printing. This feature helps to speed up the screen handling but it could also mean that some text may print as justified when you did not intend it.

Keep Together - The Conditional End-of-Page command lets you specify the number of lines (or inches or points) to be kept together from the cursor position, but if you change the font size, you may need to re-set the number of lines, inches or points. The Block Protect command prevents a paragraph being split over two pages.

Kerning - The Kerning command closes the gap between characters such as AW.

Keyboard Commands - WordPerfect has keyboard commands that use either the Command key or Shift-Command but it also uses Command-1 to Command-9 as the equivalent of the function keys on IBM keyboards. These commands are not easy to learn, so much so that a template is provided for the extended keyboard.

Some of the WordPerfect commands can be confusing. For example, Command-1 on the keyboard is the Format Column command but Command-1 on the keypad deletes the line on which the insertion point is located. (The Undelete command can recover text accidentally deleted.)

Keycaps - The Insert Literal command displays an array of 256 characters. You just click on a character to insert it where the cursor is flashing. This is easier than Keycaps where you have to use Copy and Paste (or remember the key combination). However, unlike Keycaps, you cannot change fonts while the array is displayed.

Line Numbers - WordPerfect cannot number the lines of a document.

Line Spacing - WordPerfect does not have line spacing icons in the Ruler. You must use the Line command in the Format menu to specify the line spacing. Line spacing applies not only to the paragraph containing the cursor but to any following paragraphs. So if you want double line spacing in only one paragraph, you must use the Line Spacing command again to change the next paragraph.

Double line spacing in WordPerfect adds extra blank space below each character, the same height as the font size. But if you change font size after specifying double spacing, you may find that the space below the characters does not change until you delete the code for the previous font size. (The double line spacing icon in Word 3 adds 12 points of blank space above each character, irrespective of the font size.)

You can specify line spacings in multiples of half a line up to a maximum of 10 lines. You can also specify the space between the lines in terms of the number of points.

Macros - WordPerfect offers macros to records keystrokes and mouse commands. You can create a macro to start the spell checker, to set up a format or to perform almost any series of operations. Macros can be nested and/or chained and they can be made conditional to perform quite complex tasks.

Mail Merge - Mail Merge requires two files, one containing a list of names and addresses, the other holding a letter or similar document with codes for the fields used in the name and address list. In the name and address file each field is normally typed on a separate line but a field can be on two or more lines, so you can put all or part of the address in one field on several lines.

You can test the mail merge by creating a file of the merged letter and addresses but there may be insufficient memory with a long list. You can print out this file which has page breaks between each letter. Alternatively, you can merge straight to the printer. Unlike Word 3, WordPerfect does not offer conditional facilities in mail merge.

Manual - The manual has 684 A5 size pages in a ring binder, together with a quick reference card that folds to 3.75" x 8.5". The 270 page tutorial section is easy to understand but it has 40 pages on macros and only 8 pages on formatting.

The reference section deals with the commands in alphabetical order but it has very few illustrations, other than a picture of the menu for each command. Hoping to learn more, I bought a book on WordPerfect by Rob Krumm but found 18 mistakes in the first two chapters so I asked for a refund.

Margins and Indents - The Page Setup box allows you to set the size of paper but not the margins (it uses the Macintosh System dialogue boxes). There is a Page Layout command which lets you set the margins but this applies to each paragraph and is simply a more precise way than dragging

the left or right indent markers in the Ruler.

WordPerfect does not have a First Line Indent marker in the ruler. You must use the tab key to indent the first line of each paragraph. However, there is a Left-Right Indent option in the Paragraph command to indent text from both the left and right margins.

To create a hanging paragraph, you must use the Indent command to indent to the first tab mark, then use Shift-Tab (known as Margin Release) to move the cursor back to the start of the line. When you press Return at the end of the paragraph, the indent returns to normal so if you want another hanging paragraph you must repeat the commands.

Menus - In the pull down menus, 15 of the commands have sub-menus that pop out sideways. To select one of these commands, you must move the mouse sideways. Pop out menus seem to slow things down even though it takes less than a second to move the mouse sideways.

Numbering Paragraphs - If you don't use the Outline command before the Numbering command, WordPerfect numbers only the paragraph you type. But if you use the Outline command first, the paragraphs are numbered automatically as you type them. You can have up to seven levels of paragraph numbering, each new level being actuated by the tab key. The default sequence is I, A, 1, a, (1), (a), i) but you can select two other pre-defined sequences or define your own sequence. When you delete a paragraph or insert another, the other paragraphs are re-numbered if necessary.

Outlining - WordPerfect has an Outline command but it is nowhere near as powerful as the Outlining command in Word 3. The WordPerfect command is just for inserting automatic paragraph numbers which can then be used to create a Table of Contents.

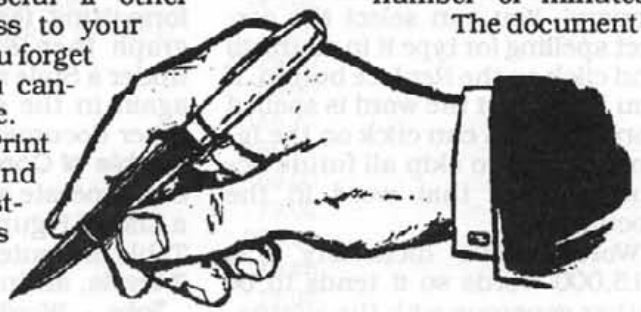
Page Breaks and Pagination - Page breaks are inserted automatically but you can insert a forced page break with Command-Return. WordPerfect calculates and inserts page breaks as soon as you stop typing or using the mouse.

Page Numbering - WordPerfect offers automatic page numbering (in Arabic or lower case Roman numerals only) with the numbers positioned at the top or bottom of the page, on the left, right or centred, or on alternate edges of facing pages.

You can change kinds of numbers and start a new sequence on any page so you can number different sections of a document in different ways, e.g. a preface in Roman numerals, the main document in Arabic numerals and appendices numbered separately, each starting at page 1.

Password Protection - When you save a file with the Save As command, you can specify a password. This is useful if other people have access to your computer, but if you forget the password, you cannot re-open the file.

Postscript - The Print Options command lets you enter Postscript instructions for a LaserWriter in a special window. Postscript instructions do not show in the normal window but you can see all or part of them in the code window.



Print Preview - The Print Preview mode displays a miniature version of each page (or two pages side by side) to check the position of headers, footers and footnotes which do not appear on the normal view. You can see a full size version by clicking with the pointer (in the form of a magnifying glass icon), or a double size view by clicking twice. There are no scroll bars in Print Preview but if you hold down the Option key, the pointer becomes a hand for dragging the window.

Printing - WordPerfect uses the Macintosh System dialogue box for the Print command so it allows you to specify the number of copies and the numbers of the pages to be printed. The File Management command can print a file direct from the disc without opening it. You can't do that with Word 3 unless you use MultiFinder.

Rulers - You can display or suppress a Ruler at the top of the screen, showing the positions of the margins and tabs. There are icons to change the text alignment from left to right or centre or justified both sides and there is an icon to revert the settings in the Ruler to the values it had when it was first displayed. The Ruler also has icons for setting columns and for page numbers and a shaded bar for the hyphenation zone.

Saving a File - When you save a file, you can specify three other formats, namely, IBM WordPerfect, text or Word 3. Files translated to Word 3 may have slightly different formats, e.g., continuous underlining in WordPerfect becomes word underline (excluding spaces) in Word 3.

WordPerfect has a facility to save a file automatically every few minutes (you can specify the number of minutes). The document is saved in a temporary backup file which is deleted when you exit the program properly. It also lets you create a backup file in the sense of retaining the previous version of a file. The backup file stays on the disc even when you exit properly.

There is a special command called Save Copy As which saves the file currently in memory with a new name but retains the original name on the screen.

Searching and Replacing - WordPerfect can search forwards or backwards to find a word or phrase or a hidden code but the Replace command works forward only. You can enter a search word or a replacement word in bold or other formats. You can specify whether to search for whole or partial words and whether to search for a case sensitive match. There is a special 'wildcard' code for searching for any character.

Selecting Text - The Select command allows you to select a sentence, a paragraph, a page or the whole document. Alternatively , you can turn on the selection mode with Shift-Command-N, use the arrow keys, then switch off the selection mode.

When you double click on a word in WordPerfect, the word is

selected but not the space following it. If you cut the selected word, WordPerfect leaves two spaces behind so you must press Delete to remove one of them. (When you double click on a word in Word 3, it selects the word and the space after it , so if you cut the word, it leaves only one space behind. If you type a replacement word, it puts the space back.)

Sorting - Unlike Word 3, WordPerfect does not have a sort command so it is not easy to sort paragraphs or lines in a table into alphabetical or numerical order.

Spell Checking - When you tell WordPerfect to start spell checking, it highlights the first suspect word and also displays a list of alternatives chosen from its 'dictionary'. You can select the correct spelling (or type it in yourself) and click on the Replace button. If you know that the word is spelled correctly, you can click on the Ignore button to skip all future occurrences of that word in the document.

WordPerfect's dictionary has 115,000 words so it tends to be rather generous with the alternatives. You can ask for phonetic alternatives (there/their) and you can also use 'wildcards' for one or several characters. Crossword fans will find the spell checker very useful for solving clues.

The Spell Checker has four nice features, lacking in Word 3. When it pauses on a suspect word you can opt to Skip Once or Ignore. (Word 3 has no option to skip a word once.) The WordPerfect spell checker detects repeated words like 'the the' and it offers a word count. It also has an option to check the whole document from the start, irrespective of the position of the insertion point.

WordPerfect comes with a UK dictionary. You can edit the dictionary and you can also build up your own 'dictionary' of words such as Desktop, Clipboard, spreadsheet, etc.

Sticky Spaces and Hyphens - You can have non-breaking spaces or hyphens to prevent two or more words being split on to two lines, e.g., Mr R Cholmondley–Smythe. When you display the codes, you can see the difference between ordinary and 'sticky' spaces and hyphens.

Styles - WordPerfect has a Styles command in its Font menu but this is simply for changing formats to or from Plain text, Bold, Italics, Underline, Outline, Shadow, Superscript, Subscript, Overstrike, Strikeout and Redline. WordPerfect has no counterpart to the Styles commands in Word 3 which offer very powerful facilities to define a set of formatting features for a paragraph then save those features under a Style name and use them again in the same document or other documents.

Table of Contents - WordPerfect can generate a Table of Contents, a List of Figures and an Index. A Table of Contents can have up to 7 levels, an Index only 2 levels.

Tabs - WordPerfect has preset tabs (left align) every half inch but you can change the default spacing. There are four types of tab marker, namely, left align, right align, centre and decimal tab. If you use Command-tab, any numbers you type will align with the decimal point under left align tabs.

You can move existing tabs by dragging them, but to drag one off the Ruler or to set a new tab, you must first click on the appropriate tab icon (the pointer changes shape to that tab icon) then drag the tab icon down or click in the Ruler to set a new tab. After setting a tab or several tabs of that type, you must click again on its icon to convert the pointer back to an arrow, or you can click on another tab icon to set tabs of a different type. There is also a command to delete all the tabs.

WordPerfect offers tab leaders, i.e., a row of dots from the end of the text to the next tab position. This is useful for tables, especially a Table of Contents. There are three icons in the Ruler for setting tabs with dots before either left, right or centre align tabs.

Thesaurus - WordPerfect has a Thesaurus command to find synonyms. You place the insertion point in or at the start or end of a word in your text, then choose Thesaurus from the Special menu. The lower part of the screen displays three columns. The first columns shows a list of alternatives and you can click on one of these words to display another list in the second column and so on.

Underlining - WordPerfect offers four different types of underlining, namely, single and double, each either continuous or non-continuous. The latter underlines words and spaces but not tabs. If you want to underline words only (excluding spaces) you must switch the underlining off and on for each space between the underlined words.

Undo and Undelete - There is an Undelete command as well as the usual Undo command. The Undelete command can recall the last three phrases deleted.

Vertical Lines and Borders for Tables - With Word 3, it is easy to put vertical lines down a table between the columns of data. There is an icon in the Ruler (next to the tab icons) which is used to insert vertical lines. If used in conjunction with a Box Border, the vertical lines marry up with the top and bottom lines of the box. There are no similar facilities in WordPerfect. You can type the vertical line character but this leaves spaces between the lines and does not marry up properly with horizontal lines created with the Underline format.

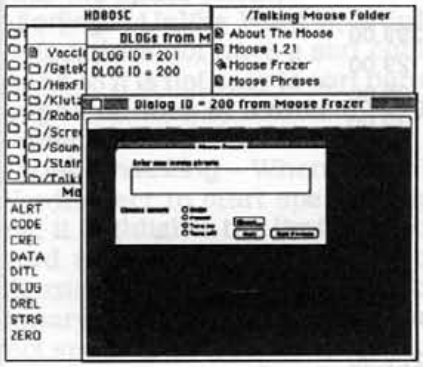
Widows and Orphans - WordPerfect can prevent widows and orphans (a single line of a multi-line paragraph appearing at the bottom or top of a page) but it is not a default. You must switch it on deliberately. However, you can turn Widow/Orphan control on and off as many times as you want in a document.

Mac Library

There are three new Update disks this month.

Disk 905 Update 5

This disk contains **ResEdit 1.2d2** and **ResEdit 1.2ß2**



ResEdit is an application which allows the user to modify, copy or create resources such as icons, fonts, cursors etc. An article on ResEdit was published in the July, 1985 issue of MacWorld. ResEdit is extremely useful to anyone who wishes to modify or customize the resources belonging to an application.

ResEdit comes with the ResEdit C and Pascal Examples. A sample resource editor is included with ResEdit. The example uses the MPW environment, and the MPW Assembler. You can build the sample program using the Build script provided in the Examples folder.

MacSnoop is a disk editor that enables you to edit files on the disk. It was developed to fill the gap left when FEDIT was removed from the shareware market a number of months ago. The author became frustrated by not having an editor capable of working with HFS and the new 128K ROMs and began to write his own. The author writes:-

"While not yet up to the full capabilities of FEDIT in terms of file recovery tools, it does have many wished for enhancements not the least of which is full HFS and MFS support. In addition, the overall design allows multiple volume/directory and editing windows open on the desktop and a closer adherance to the Macintosh User Interface."

Colour Icon Edit is a Mac II only program to create color icon resources (cicns). It will deal only with icons with 4-bit depth (up to 16 colors). Other cicns will be treated incorrectly, so beware.

cicns are color icons. One is the color mac logo that appears at startup (Welcome To Macintosh). You can also make the icons that appear in dialog boxes cicns, or you can use them in your own programs if you want. You cannot replace a file's Finder icon with a cicn.

MacsBug 6.0 is also on the disk. MacsBug is a pro-

Runner v1.0 - ©1988 par Benoît Widemann

MultiFinder is a harsh environment to DAs: if a DA needs a lot of memory, it may not work correctly. Troubles seems to appear specially with the TextEdit clipboard; depending how much memory is physically installed into your Mac. In an average 1Mb Mac, the "safety" limit is only around 4K; if you need to cut/paste more text from a DA, you may see your text "garbaged".

This skeleton-application helps in a very simple way : instead of installing the unsafe DA into the System file, install it into Runner. Runner lets you decide how much memory you need to allocate, with the "Get Info" window of the Finder (default is 128K, but may be freely changed).

To install one or more DAs into Runner, use the Font-DA Mover as usually, except that you'll have to press <option> while you click "open" to get a chance to open Runner. Those DAs will only appear in Runner's apple-menu.

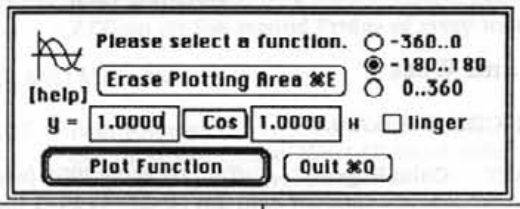
If a DA is installed both into Runner and the System file, you can open both, depending where from you open it: if you open it from Runner, the Runner-installed version is launched; if you open it from anywhere else (Finder, DA-Handler, or another application) the System-installed version is launched. You may even open both together, if you're careful to not "overload" the System's one.

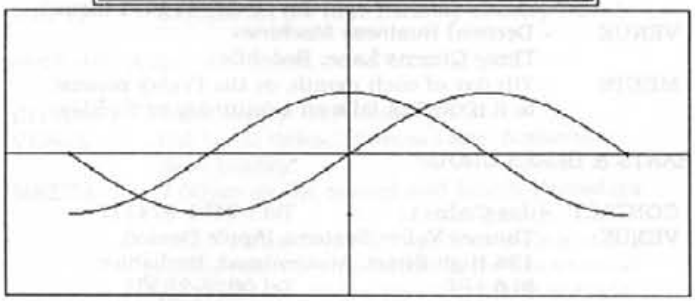
Depending the ID that Font-DA Mover assigns, it may happen that a System-installed DA doesn't appear into Runner's apple-menu. Simply switch to Finder, or any other application, to access it.

Runner is a freeware, please give it around. It's totally useless out of MultiFinder.

Calva: BW10, Delphi/Pan: BENOITW (version 1.0)

Multi-Plot v 1.00





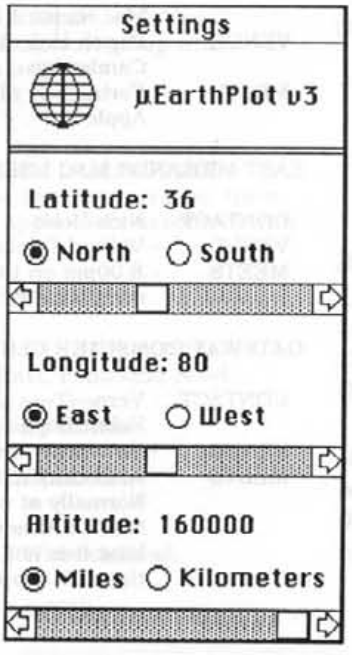
gramming debugger.

Disk 906 Update 6

Smart Quotes is a Desk Accessory that watches what you type and makes your application think you typed something else. Smart Quotes changes straight quotes into curly quotes; changes "fl" and "fi" pairs into ligatures; changes double hypens into em-dashes; catches double capitals at the beginning of words.

Mac II Inits These are INITs that you put in your system folder. They install an FKEY (#9) that turns off and on the MC68020's instruction cache. You just put them in your system folder, and at startup, they install the FKEY. CacheOff & Key INIT v1.2 and CacheOff & Key INIT v1.2ao do the same thing, but first turn off the instruction cache.

DAfx (pronounced "D - A - effects"), the most full-featured, user-friendly paint utility contained in a DA! DAfx gives you almost all the tools of MacPaint® along with some of the better features of Super Paint. And, as if that were not enough, you can also use seven graphic formats from four computers!



Memoir is a desk accessory which shows you the amount of free memory in your Macintosh in kbytes. Memoir constantly updates the amount of memory available while it is open so you always have an accurate count. Clicking on the vice icon in Memoir's window will purge all purgeable blocks in memory and compact memory, freeing up as much memory as possible. Memoir now displays the amount of free memory in red on Mac][']s (it works perfectly normal in black and white on other Macintoshs).

Peeper is a very simple DA which allows you to look inside paint documents without having to start up your favorite paint program. Future versions may support PICT documents. Peeper allows you to view ting but not edit it. This is a little utility which lets you browse the contents of a painting quickly, when you've forgotten what was in it.

Other DAs on the disk are **Eat Memory DA, Pager** and **Runner** (see screen dump). Other applications are **MultiPlot 1.00** (see screen dump), **Colour Life** and **DeskTops 1.5**. There is also a file giving extensive information on graphic formats.

Disk 907 Update 7

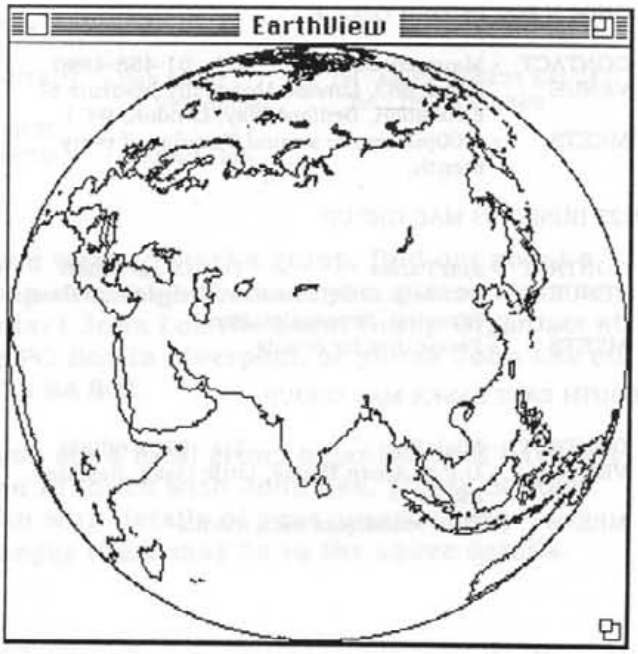
Contour creates contour plots of functions. Data may be provided in two ways: either as an analytical function of x and y or as a file of function values evaluated at points on a grid. The number of contours and their values may be varied in a number of ways, as may the style (darkness) of positive, zero, and negative contour lines. A title and axis labels may also be added to the plot.

Gravitation Ltd. is a graphic, two dimensional orbital simulation. Users can enter custom designed solar systems or run previously created ones. Systems can be views at varying zoom levels, recorded and played back at high speed, and edited via the graphic solar system editor.

Hurricane displays information about hurricane systems.

The **Map Projections Stack** displays information about the various map projections in a graphical and informative way.

EarthPlot 3.0 is an updated version of this earth drawing program.



User Groups

London Region

ESSEX GROUP

CONTACT - Pat Bermingham Tel : [illegible]
VENUE - The Y.M.C.A., Victoria Road, Chelmsford
MEETS - Third Friday of every month

CROYDON APPLE USERS GROUP

CONTACT - Graham Attwood Tel : [illegible]
VENUE - 515, Limpfield Road, Warlingham, Surrey
MEETS - 7.30pm on the third Thursday of every month

HERTS & BEDS GROUP

CONTACT - Norah Arnold Tel : [illegible]
VENUE - The Old School, 1, Branch Road, Park Street Village, St Albans, Herts.
MEETS - 8.00pm on the first Tuesday of each month

KENT GROUP

CONTACT - Richard Daniels Tel : [illegible]
VENUE -
MEETS - Contact Richard

LONDON APPLE II GROUP

CONTACT - Chris Williams Tel : [illegible]
VENUE -
MEETS - Contact Chris

LONDON MACINTOSH GROUP

CONTACT - Maureen de Saxe Tel : [illegible]
VENUE - Room 683, London University Institute of Education, Bedford Way, London, WC1
MEETS - 6.00pm on the second Tuesday of every month.

M25 BUSINESS MAC GROUP

CONTACT - Jim Panks Tel : [illegible]
VENUE - Sir Mark Collett Pavilion, Heaverham Road, Kemsing, Sevenoaks, Kent
MEETS - Phone Jim for details

SOUTH EAST ESSEX MAC GROUP

CONTACT - Mick Foy Tel : [illegible]
VENUE - D.P.S. Acorn House, Little Oaks, Basildon, Essex
MEETS - First Monday of each month

South

POOLE MACINTOSH USER GROUP

CONTACT - David Huckle Tel : [illegible]
VENUE - Deverill Computers (dealer) Itec House, 34-40 West Street, Poole, Dorset BH15 1LA
MEETS - Four times a year

SOUTHAMPTON

CONTACT - Geoff Parson [illegible]
VENUE - Contact Geoff for details

Wales and West

BRISTOL GROUP (B.A.U.D)

CONTACT - Colin Rogers [illegible]
VENUE - Decimal Business Machines Three Queens Lane, Redcliffe
MEETS - 7th day of each month, or the Friday nearest to it if the 7th falls on a Saturday or Sunday

HANTS & BERKS GROUP

CONTACT - Joe Cade Tel : [illegible]
VENUE - Thames Valley Systems (Apple Dealer), 128 High Street, Maidenhead, Berkshire, SL6 1PT Tel [illegible]
MEETS - 7.00pm on the second Monday of every month

MACTAFF - SOUTH WALES MAC GROUP

CONTACT -
VENUE - Apple Centre South Wales, Longcross Court 47 Newport Road, Cardiff
MEETS - Contact Apple Centre

Midlands

CAMBRIDGE APPLE USERS GROUP

CONTACT - Il Ian Archibald Tel : [illegible]
Mac Richard Boyd Tel : [illegible]
VENUE - Parish Hall of St Mark's Church, Barton Road Cambridge
MEETS - Fortnightly alternating between Mac and Apple II

EAST MIDLANDS MAC USER GROUP

CONTACT - Nick Helm Tel : [illegible]
VENUE - Wilford Cricket & Rugby Club, Nottingham
MEETS - 8.00pm on the first and third Wednesday of every month.

GATEWAY COMPUTER CLUB

CONTACT - Vern Tel : [illegible]
Robin Boyd Tel : [illegible]
VENUE - Bob Hope Recreation Centre, R.A.F Mildenhall
MEETS - AMS conference room, Mildenhall base. Normally at weekends, check with Robin NOTE : Although the venue is on a service base it is not in a security restricted area so the club is open to interested parties.

LEICESTER GROUP

CONTACT - Bob Bown Tel : [illegible]
VENUE - Shakespeare Pub, Braunstone Lane, Leicester
MEETS - 7.30pm to 10.0pm on the first Wednesday of every month

LIVERPOOL GROUP

CONTACT - Irene Flaxman Tel : [illegible]
VENUE - Check with Irene
MEETS - Second Monday of every month.

MIDAPPLE

CONTACT - Tom Wright Tel : [illegible]
VENUE - I.T.E.C., Tildasley Street, West Bromwich, West Midlands
MEETS - 7.00pm on the second Friday of every month

THE MIDLAND MAC GROUP

CONTACT - Ivan Knezovich Tel : [illegible]
VENUE - Spring Grove House, West Midland Safari Park, Bewdley, Worcestershire.
MEETS - 8.00pm on the first Tuesday of every month

WEST MIDLANDS AMATEUR COMPUTER CLUB

CONTACT - John Tracey Tel : [illegible]
VENUE - Hill Crest School, Simms Lane, Netherton, Near Dudley.
MEETS - 7.00pm on the second and fourth Thursdays of each month.
NOTE - - This is not an Apple user club, it is a general interest club which welcomes users of all machines. There are currently two Apple user members.

North

BURNLEY APPLE USER GROUP

CONTACT - Rod Turnough Tel : [illegible]
VENUE - Michelin Sports Centre
MEETS - 2nd Wednesday of each month

CREW COMPUTER USER CLUB

CONTACT - Paul Edmonds
[illegible]
VENUE - Christ Church Hall, Crewe
MEETS - Fortnightly, Fridays, 7.30pm to 10.00pm
NOTE: this is a general interest group with Apple users among its members

HARROGATE AREA

CONTACT - Peter Sutton Tel : [illegible]
No active organised group in this area but there are a number of keen Apple users in contact with each other.

THE NORTH EAST APPLE COMPUTER CLUB

CONTACT - Philip Dixon Tel : [illegible]
VENUE - Apple Centre North East, Pontcland Road, Pontcland, Newcastle-on-Tyne
MEETS - First Wednesday of every month

THE NORTH WEST APPLE COMPUTER CLUB

CONTACT -
VENUE - Horse & Jockey Pub., Winwick Road, Warrington
MEETS - First Monday of every month

THE NORTH WEST APPLE USERS GROUP

CONTACT - Max Parrot
Tel : [illegible]
Tel : [illegible]
VENUE -
MEETS - Ring Max

Scotland

EDINBURGH GROUP

CONTACT - Ricky Pollock Tel : [illegible]
VENUE -
MEETS - Meetings monthly, check with Ricky

Postal

APPLE II PROGRAMMERS CLUB

CONTACT - Philip Dixon TEL : [illegible]
VENUE - None established yet
MEETS - No meetings yet, has operated through postal newsletter published quarterly
NOTE : Philip started the club some time ago based on a membership fee of #1.00 to cover the cost of newsletters. Original intention was to concentrate on BASIC and Assembler programming.

New Groups

DORCHESTER

CONTACT - Ron Hoare Tel : [illegible]
VENUE -
MEETS Meeting on March 1st -contact Ron Hoare

ORPINGTON COMPUTER CLUB

CONTACT - Terry Wheeler Tel : [illegible]
VENUE - G.E.A. Hall, Woodhurst Avenue, Petworth
MEETS - Contact Terry

DONCASTER SOUTH YORKSHIRE

CONTACT - Colin Withington Tel : [illegible]
VENUE -
MEETS - Contact Colin

LEEDS

CONTACT - Bob Miller [illegible]
- T Veluppillai [illegible]
VENUE -
MEETS - Contact Bob

If you want to start a group, find out about a group that might be near you, please write or contact John Lee the Local Group Organiser at the PO Box in Liverpool, or phone John Lee on [illegible].

If you are a local group organiser and have not been in touch with John Lee, please contact John with details of your group, or any changes there may be to the above details.

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A. Books for sale, in mint condition (original price in brackets):-

Enhancing your Apple II+ Vol. 1, Don Lancaster (£12.75) **£3.00**

Making Friends with AppleWriter II, Ellen Thro (£17.25) **£5.00**

Learning with Apple Logo, D.H. Watt (£17.50) **£6.00**

B. "Trickshot" program for Apple II+ (not //e) with good graphics.
Plays a good game of Billiards, Snooker, Three Ball, Open Table, or allows you to set up various trick shots (hence the name).
I will swop this for another game, or **£5.00**.

'Phone Bill Hill on .....

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Apple Super Serial Card II.
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For fuller details of the seminar (e.g. regulations, themes), accommodation and social programme, please contact the Seminar Convenor - **Ahmad Ubaydli**
c/o Literary & Linguistic Computing Centre,
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Telephone: 0223-335029

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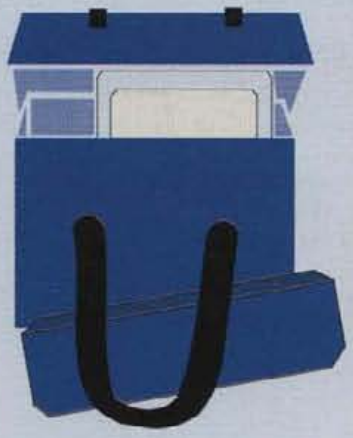

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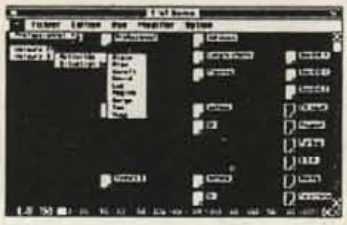

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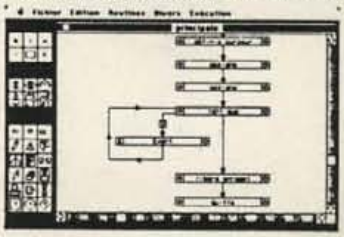

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